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(FILE 'USPAT' ENTERED AT 19:52:23 ON 24 JUN 92)

SET PAGELength 62

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L1 3 S DATASUIT OR DATAGLOVE

=> d 1-3 cit date ab

1. 5,047,952, Sep. 10, 1991, Communication system for deaf, deaf-blind, or non-vocal individuals using instrumented glove; James P. Kramer, et al., 395/2; 341/20; 381/36; 434/229 [IMAGE AVAILABLE]

L1: 1 of 3

TITLE: Communication system for deaf, deaf-blind, or non-vocal individuals using instrumented glove  
US PAT NO: 5,047,952 DATE ISSUED: Sep. 10, 1991  
[IMAGE AVAILABLE]  
APPL-NO: 07/258,204 DATE FILED: Oct. 14, 1988

ABSTRACT:

A communication system for deaf, deaf-blind, or non-vocal individuals includes an instrumented glove for obtaining electrical signals indicative of a hand configuration of a first individual. Strain gage sensors in the glove flex with movement of the hand. Each sensor includes a tension strain gage and a compression strain gage which are serially connected and form two legs in a bridge circuit. Signals from the bridge circuit are amplified and digitized and applied to a computer which includes an adaptive pattern recognition algorithm which is responsive to hand-state vectors for recognizing letter beacons in hand-space. A second individual communicates  
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L1: 1 of 3

with the first individual through the computer system using a portable keyboard. The output devices for communicating to the first and second individuals depend on the visual, vocal and hearing capabilities of the individuals and can be selected from a voice synthesizer, LCD monitor, or braille display.

2. 4,986,280, Jan. 22, 1991, Hand position/measurement control system; Beth Marcus, et al., 128/774; 33/512; 128/782 [IMAGE AVAILABLE]

L1: 2 of 3

TITLE: Hand position/measurement control system  
US PAT NO: 4,986,280 DATE ISSUED: Jan. 22, 1991  
[IMAGE AVAILABLE]  
APPL-NO: 07/222,092 DATE FILED: Jul. 20, 1988

ABSTRACT:

A system is described for sensing the relative angular orientation of two relatively movable joint segments of a living body joined together at a joint. The system comprises at least two links coupled together about a pivot axis so that the links are pivotable relative to one another about the axis so as to define a variable mechanical angle between the links about the axis. The two links are secured respectively to the joint segments so that the links pivot about the pivot axis when the joint segments pivot about said joint. A Hall effect sensor is used to accurately sense the mechanical angle.

The mechanical angle sensed by the sensor is then correlated with the actual angle made by the joint segments. The arrangement is used with each finger and thumb joint of the hand to provide data representative of finger and thumb orientations of a hand.

3. 4,972,074, Nov. 20, 1990, Optical attenuator movement detection system; Scott M. Wright, 250/227.11, 221, 227.24 [IMAGE AVAILABLE]

L1: 3 of 3

TITLE:	Optical attenuator movement detection system		
US PAT NO:	4,972,074	DATE ISSUED:	Nov. 20, 1990
	[IMAGE AVAILABLE]		
APPL-NO:	07/335,833	DATE FILED:	Apr. 10, 1989

ABSTRACT:

An optical attenuation measurement system is provided for obtaining signals proportional to movement of a system to which it is attached. The measurement system includes a light source positioned within a length of conduit in which the light emitted will produce multiple reflections. A fiber optic cable is slidably disposed within the conduit to transmit the radiation emitted from the light source gathered thereby. The relative displacement of the fiber optic cable to the light source produces a signal as a function of this displacement which is converted into electrical signals by a light detecting element at the opposite end of the cable. The system is particularly useful to form an interactive device for control of a remote intelligent machine, robot or the like. For example, the system may be used on an operator's hand to detect movement of the hand and fingers for controlling a robotic hand which will mimick the operator's hand movements.

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SET PAGELength 62

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L1 11 S VIRTUAL ENVIRONMENT  
L2 11 S VIRTUAL ENVIRONMENT#  
L3 0 S COMPUTER-GENERATED WORLD#  
L4 3 S ARTIFICIAL REALITY

=> d 1-3 cit date ab

1. 5,025,314, Jun. 18, 1991, Apparatus allowing remote interactive use of a plurality of writing surfaces; John C. Tang, et al., 358/93; 178/18; 434/309, 350 [IMAGE AVAILABLE]

L4: 1 of 3

TITLE: Apparatus allowing remote interactive use of a plurality of writing surfaces  
US PAT NO: 5,025,314 DATE ISSUED: Jun. 18, 1991  
[IMAGE AVAILABLE]  
APPL-NO: 07/559,486 DATE FILED: Jul. 30, 1990  
24 JUN 92 19:01:49 U.S. Patent & Trademark Office P0018

L4: 1 of 3

ABSTRACT:

Remote interactive use of a plurality of writing surfaces, such as special wall mounted whiteboards and the like, is facilitated by an apparatus which includes, for each writing surface, a translucent screen acting as the writing surface itself, a video camera located behind the translucent screen for receiving an image of indications imparted upon the translucent screen, and a video projector for projecting onto the back side of the translucent screen a composite of the images imparted upon each of the translucent screens. Backlighting of a user is employed to allow presentation of the processes of imparting, using and referring to the indicia together with the indicia itself. Proper ambient lighting also provides a limited three dimensional view of the user. Audio portions of interactive work may be captured by a microphone and transmitted to speakers in conjunction with the video portion of the interactive work. An audio/video mixing resource may be employed to combine the images of indicia and audio from various worksites for presentation. Low bandwidth of the present system facilitates compression and use with emerging commercial communications standards (e.g., ISDN).

2. 5,021,976, Jun. 4, 1991, Method and system for generating dynamic, interactive visual representations of information structures within a computer; Alan D. Wexelblat, et al., 395/159; 340/747; 364/146, 188 [IMAGE AVAILABLE]

L4: 2 of 3

TITLE: Method and system for generating dynamic, interactive visual representations of information structures within a computer  
US PAT NO: 5,021,976 DATE ISSUED: Jun. 4, 1991  
[IMAGE AVAILABLE]  
APPL-NO: 07/271,091 DATE FILED: Nov. 14, 1988

ABSTRACT:

A method and system for generating dynamic, interactive visual representations of information structures within a computer which enable humans to efficiently process vast amounts of information. The boundaries of the information system containing the information to be processed are established and a set of mathematical relationships is provided which indicates the degree of correlation between parameters of interest to a user and segments of information contained within the boundaries. A visual display is generated for the user which has a plurality of different iconic representations and visual features corresponding to the parameters defined by the mathematical relationships. The iconic representations and visual features of the visual display change with the movement of the mathematical relationships within the boundaries of the information system according to the degree of correlation between the parameters of interest and the segment of information through which the mathematical relationships are passing.

\* 3. 4,843,568, Jun. 27, 1989, Real time perception of and response to the actions of an unencumbered participant/user; Myron W. Krueger, et al., 382/16; 358/93, 107; 395/135

L4: 3 of 3

TITLE: Real time perception of and response to the actions of an unencumbered participant/user

US PAT NO: 4,843,568 DATE ISSUED: Jun. 27, 1989

APPL-NO: 06/850,770 DATE FILED: Apr. 11, 1986

24 JUN 92 19:01:56

U.S. Patent & Trademark Office

P0019

L4: 3 of 3

ABSTRACT:

Apparatus and method for using an image of the human body to control real time computer events wherein data regarding a participant are acquired through any means of imaging without marking the participant or requiring that he or she use or wear a stimulus source, sensing device or special clothing. Perception and feature analysis are carried out by specialized circuitry and computer software, and response to perception is expressed using any device controllable by a computer. Participants generally are unaware of processing delays between action and reaction, and their perception of an event is similar to dealing with a human being or animate creature. Perception and response occur in real time with action and reaction closely coupled.

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SET PAGELength 62

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L1 11 S VIRTUAL ENVIRONMENT

=> d 1-11 cit date ab

1. 5,107,443, Apr. 21, 1992, Private regions within a shared workspace;  
Randall B. Smith, et al., 395/158; 380/3 [IMAGE AVAILABLE]

L1: 1 of 11

TITLE: Private regions within a shared workspace  
US PAT NO: 5,107,443 DATE ISSUED: Apr. 21, 1992  
[IMAGE AVAILABLE]  
APPL-NO: 07/241,525 DATE FILED: Sep. 7, 1988

ABSTRACT:

In a shared navigable workspace that is presented at more than one workstation, a region is made private in response to a user request. The user can also indicate the region's level of privacy by indicating levels of access of different users. The private region's contents are displayed only to users that have visual access; a non-informative pattern covers the region's area on the displays of other users. The private region and its contents can be modified only by a user with access to modify. When a user requests movement of a pointer into the private region, the pointer can be presented in the private region if the user has sufficient access; otherwise, the pointer would be kept outside the private region's boundary. If a user requests a transition into the private region by selecting a selectable transition unit, called a teleporter, the request would be denied unless the user has sufficient access. The pointer can operate according to a physical metaphor in which it picks up, holds, and puts down other objects, and the user can be permitted to move an object into the private region or to pick up

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L1: 1 of 11

an object within the private region only if the user has sufficient access. Within such a metaphor, a key display object held by a user's pointer can indicate that the user has sufficient access to move the pointer into a corresponding private region; if the user's pointer is not holding the key, it cannot move into the private region.

2. 5,072,412, Dec. 10, 1991, User interface with multiple workspaces for sharing display system objects; D. Austin Henderson, Jr., et al., 395/159, 158 [IMAGE AVAILABLE]

L1: 2 of 11

TITLE: User interface with multiple workspaces for sharing display  
system objects  
US PAT NO: 5,072,412 DATE ISSUED: Dec. 10, 1991  
[IMAGE AVAILABLE]  
APPL-NO: 07/030,766 DATE FILED: Mar. 25, 1987

ABSTRACT:

Workspaces provided by an object-based user interface appear to share windows and other display objects. Each workspace's data structure includes, for each

window in that workspace, a linking data structure called a placement which links to the display system object which provides that window, which may be a display system object in a preexisting window system. The placement also contains display characteristics of the window when displayed in that workspace, such as position and size. Therefore, a display system object can be linked to several workspaces by a placement in each of the workspaces' data structures, and the window it provides to each of those workspaces can have unique display characteristics, yet appear to the user to be the same window or versions of the same window. As a result, the workspaces appear to be sharing a window. Workspaces can also appear to share a window if each workspace's data structure includes data linking to another workspace with a placement to the shared window. The user can invoke a switch between workspaces by selecting a display object called a door, and a back door to the previous workspace is created automatically so that the user is not trapped in a workspace. A display system object providing a window to a workspace being left remains active so that when that workspace is reentered, the window will have the same contents as when it disappeared. Also, the placements of a workspace are updated so that when the workspace is reentered its windows are organized the same as when the user left that workspace. The user can enter an overview display which shows a representation of each workspace and the windows it contains so that the user can navigate to any workspace from the overview.

3. 5,038,281, Aug. 6, 1991, Acceleration of system interrupts between operating systems in guest-host relationship; Anthony M. Peters, 395/700; 364/241.2, 280, 280.8, 280.9, 281, 281.3, 281.6, DIG.1; 395/725 [IMAGE AVAILABLE]

L1: 3 of 11

TITLE: Acceleration of system interrupts between operating systems in guest-host relationship  
US PAT NO: 5,038,281 DATE ISSUED: Aug. 6, 1991  
[IMAGE AVAILABLE]  
APPL-NO: 06/909,523 DATE FILED: Sep. 19, 1986

ABSTRACT:

This disclosure describes the acceleration of system interrupts between one operating system and another operating system which run in a guest-host relationship. The execution time required by the host operating system (HOS) to service system interrupts is substantially reduced, thus allowing the guest operating system (GOS) to execute more efficiently. The invention is implemented by enhancing HOS supervisor services and HOS dispatching functions so that GOS resident supervisor functions are bypassed.

L1: 3 of 11

relationship. The execution time required by the host operating system (HOS) to service system interrupts is substantially reduced, thus allowing the guest operating system (GOS) to execute more efficiently. The invention is implemented by enhancing HOS supervisor services and HOS dispatching functions so that GOS resident supervisor functions are bypassed.

4. 5,010,500, Apr. 23, 1991, Gesture-modified diagram for retrieval of image resembling diagram, with parts selectable for further interactive retrieval; Ranjit Makkuni, et al., 395/155; 340/706; 382/13, 56; 395/140, 156 [IMAGE AVAILABLE]

L1: 4 of 11

TITLE: Gesture-modified diagram for retrieval of image resembling diagram, with parts selectable for further interactive retrieval  
US PAT NO: 5,010,500 DATE ISSUED: Apr. 23, 1991

[IMAGE AVAILABLE]

APPL-NO: 07/303,351

DATE FILED: Jan. 26, 1989

## ABSTRACT:

Recorded video segments are retrieved and displayed through a user interface that employs gestures. The user provides gestures by moving a mouse, and the resulting signals indicate a diagram. Data identifying the diagram is used to access a data structure to obtain data indicating which of a set of interactive line drawings includes features most closely resembling the diagram. The interactive line drawing with features closest to the diagram can then be displayed. When the user selects a part of the line drawing, a menu is displayed that includes a description of the video segments that relate to that part. To assist the user in providing gestural input, a preliminary diagram is displayed, reducing the amount of information the user must provide. The user can change parts of the diagram to obtain a modified diagram resembling features that appear in a desired line drawing. The diagrams and interactive line drawings can be displayed on a workstation display screen, while the video segments can be displayed on a video monitor screen by a video disk player under control of the workstation CPU.

5. 4,984,179, Jan. 8, 1991, Method and apparatus for the perception of computer-generated imagery; Jonathan D. Waldern, 364/514; 340/705, 980; 358/104; 364/516, 550; 434/43 [IMAGE AVAILABLE]

L1: 5 of 11

TITLE: Method and apparatus for the perception of computer-generated imagery  
US PAT NO: 4,984,179 DATE ISSUED: Jan. 8, 1991  
[IMAGE AVAILABLE] DISCL-DATE: Nov. 28, 2006  
APPL-NO: 07/404,101 DATE FILED: Sep. 7, 1989  
FRN-PR. NO: 8701288 FRN FILED: Jan. 21, 1987  
FRN-PR. CO: United Kingdom  
REL-US-DATA: Division of Ser. No. 144,090, Jan. 15, 1988, Pat. No. 4,884,219.

## ABSTRACT:

The invention relates to a 3-dimensional computer graphics system in which an operator can effectively interact with a virtual model generated and displayed by a computer. In one embodiment the operator wears a helmet fitted with means which enable both the location of his head and its coordinates relative to the virtual model to be monitored and the information sent to computer. The helmet carries miniature VDUs which direct separate images to

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his individual eyes so that the image is perceived stereoscopically. The movement of the operator's eyes is also monitored by means mounted within housings of the helmet and data representing the operator's direction of vision sent to the computer. The data transmitted to the computer is used to modify the image of the model as perceived by the operator to enhance its realism.

6. 4,896,290, Jan. 23, 1990, Method for routing events from key strokes in a multi-processing computer systems; Deborah A. Rhodes, et al., 395/650; 340/711, 721; 364/927.2, 927.63, 928, 928.6, 929.12, 942, 942.2, 948.3, 948.32, 949.91, 949.92, 957, 957.6, DIG.2 [IMAGE AVAILABLE]

L1: 6 of 11

TITLE: Method for routing events from key strokes in a  
multi-processing computer systems  
US PAT NO: 4,896,290 DATE ISSUED: Jan. 23, 1990  
[IMAGE AVAILABLE]  
APPL-NO: 07/088,936 DATE FILED: Aug. 24, 1987

## ABSTRACT:

A computer system in which multiple processes may run concurrently includes a window manager for displaying windows associated with different processes. One of the processes represented by a window may be designated as active. Keystrokes are translated by a keyboard driver to events represented by keycodes. The keycodes are routed to processes with which they are associated by reference to a routing table. Unless otherwise indicated, a keycode is routed to the active process. Where a keycode is associated with and transferred to the window manager, subsequent keycodes are stored in a typeahead buffer. The window manager may modify the routing table. After completion of the window manager operation, all keycodes remaining in the buffer are routed to their associated processes as determined by the modified routing table.

7. 4,860,291, Aug. 22, 1989, Test vector definition system employing template concept; Wendell W. Damm, et al., 371/27, 17

L1: 7 of 11

TITLE: Test vector definition system employing template concept  
US PAT NO: 4,860,291 DATE ISSUED: Aug. 22, 1989  
APPL-NO: 07/138,269 DATE FILED: Dec. 28, 1987

## ABSTRACT:

A user interface for a tester or simulator includes a menu for creating templates. The templates organize a set of the user's decisions regarding the timing, direction, and masking of all of the signals occurring during one tester cycle into a convenient form for use in another menu where test vectors are actually specified. In this other menu, the templates serve as a shorthand way of describing the function of each channel and its timing characteristics during one tester cycle. Thus, these templates organize and simplify the user's decision making, since many decisions, that would otherwise have to be made again and again, may now be made only once and then incorporated again and again by reference to the appropriate template. The use of the templates also conserves total memory requirements. The template menu can provide visual feedback that includes timing diagrams and icons to assist the user in constructing the template.

8. 4,857,902, Aug. 15, 1989, Position-dependent interactivity system for image display; Michael Naimark, et al., 340/709, 724; 358/103 [IMAG  
24 JUN 92 18:49:48 U.S. Patent & Trademark Office P0006  
AVAILABLE]

L1: 8 of 11

TITLE: Position-dependent interactivity system for image display  
US PAT NO: 4,857,902 DATE ISSUED: Aug. 15, 1989  
[IMAGE AVAILABLE]  
APPL-NO: 07/050,196 DATE FILED: May 14, 1987

## ABSTRACT:

An interactive video display system with tight coupling between user-input



and the images displayed to provide a feeling of real control by the user. A library of frames of video data is stored in randomly accessible data locations, such as an optical video disc. The video data in each frame in the library is assigned a virtual position in a pre-defined data space, such that the visual image in each frame is related to visual images in other frames by virtual position in the data space. User input is provided through track ball or mouse generating displacement signals. The input signal is translated to an updated virtual position in the data space relative to a previous virtual position and the next frame having the updated virtual position is displayed next.

9. 4,583,166, Apr. 15, 1986, Roll mode for cached data storage; Michael H. Hartung, et al., 395/425; 364/228.3, 232.1, 236.2, 238.4, 242.3, 242.5, 243, 243.4, 243.41, 248.1, 249, 252, 261, 261.1, 262.4, 262.5, 927.92, 927.94, 927.97, 927.99, 931.11, 931.48, 940, 940.1, 940.4, 942.3, 942.6, 948.1, 948.11, 952, 952.1, 957, 957.1, 957.3, 959.1, 961.2, 964, 964.2, 964.23, 965, 965.4, 965.7, 976, 978.1, DIG.1, DIG.2 [IMAGE AVAILABLE]

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TITLE:	Roll mode for cached data storage		
US PAT NO:	4,583,166	DATE ISSUED:	Apr. 15, 1986
	[IMAGE AVAILABLE]		
APPL-NO:	06/433,599	DATE FILED:	Oct. 8, 1982

ABSTRACT:

A so-called "roll mode" technique provides block transfer with a disk-type of direct-access data-storage device (DASD). A set of chained commands for accessing record areas enables rapidly accessing a plurality of records within a given DASD cylinder of tracks. The rotational position of the surfaces is checked. The command within the chain, irrespective of its location, having the closest logical rotational proximity to the instant rotational position of the surfaces is selected as the first command in the chain. The chain is executed beginning at the indicated rotational position selected command through the end of the chain and then wrapped to the beginning of the original chain and continuing on until the command immediately preceding the rotational position selected command has been executed.

10. 4,533,996, Aug. 6, 1985, Peripheral systems accommodation of guest operating systems; Michael H. Hartung, et al., 395/275; 364/228.2, 228.5, 236.2, 243, 243.4, 254, 254.3, 256.3, DIG.1; 395/400 [IMAGE AVAILABLE]

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TITLE:	Peripheral systems accommodation of guest operating systems		
US PAT NO:	4,533,996	DATE ISSUED:	Aug. 6, 1985
	[IMAGE AVAILABLE]		
APPL-NO:	06/351,558	DATE FILED:	Feb. 23, 1982

ABSTRACT:

A peripheral system attached to a host having plural virtual machines  
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P0007

L1: 10 of 11

accommodates the virtual machines via "guest" attribute signals signifying that a given chain of peripheral or I/O commands are virtual machine sourced (GO bit). The attribute signals may include modifier control signals to enable the peripheral system to adjust to virtual machine operations of the

host. In particular, virtual machine "minidisks" are accommodated.

11. 4,412,286, Oct. 25, 1983, Tightly coupled multiple instruction multiple data computer system; Brendan O'Dowd, et al., 395/325; 364/228.3, 228.7, 228.8, 229, 229.2, 229.4, 230, 230.3, 240.1, 241.7, 242.6, 242.9, 242.92, 253, 254, 254.3, 256.3, 263, 271, 271.2, 271.3, 280, 280.2, DIG.1; 395/650, 800 [IMAGE AVAILABLE]

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TITLE: Tightly coupled multiple instruction multiple data computer system  
US PAT NO: 4,412,286 DATE ISSUED: Oct. 25, 1983  
[IMAGE AVAILABLE]  
APPL-NO: 06/246,427 DATE FILED: Mar. 23, 1981  
REL-US-DATA: Continuation-in-part of Ser. No. 190,510, Sep. 25, 1980, abandoned.

ABSTRACT:

A concurrent processing system utilizes a generalized linearly expandable data transfer bus architecture to tightly couple data processors, memory and I/O devices. The system is suitable for multiple instruction multiple data processing, and operates by transmitting and receiving complete transaction codes fully identifying the target device by specifying a process code. Data processing memories and I/O devices may be dynamically assigned to a process by specifying the process code thus providing great flexibility in utilization of system resources. Processors, memories and I/O devices are connected together by means of interfaces which are connected to a bidirectional bus. The complete data transaction preferably occurs during one clock period, although four additional clock periods are used to complete a bus transaction, namely, arbitration, match recognition, data validation and acknowledgement of receipt.

All the interfaces examine each transaction on the bus 5 preferably simultaneously, and allow the transaction to pass to a device and or I/O, if control registers in the interfaces correspond to those of transaction. The five bus transactions are overlapped in time so that a data transfer may occur with each clock cycle resulting in a data pipeline system of very high data transfer rates.

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Your last SELECT statement was:

S (VIRTUAL ENVIRONMENT)

Ref	Items	File
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N1	22	2: INSPEC 2_69-92/9208W1
N2	3	8: COMPENDEX PLUS_1970-1992/JUN
N3	0	6: NTIS_64-92/9207B2
N4	0	92: IHS INTERNATIONAL STANDARDS AND SPECIFICATIONS_
N5	0	103: ENERGY SCIENCE & TECHNOLOGY_1974-9205B1
N6	0	108: AEROSPACE _ 62-92/ISS13
N7	0	144: PASCAL_1973 - 1991 DEC
N8	0	275: COMPUTER DATABASE_83-92/ISSUE24
N9	0	582: JAPAN TECHNOLOGY _ 1985-1992 MAY
N10	0	675: COMPUTER ASAP_83-92/ISSUE 24

2 files have one or more items; file list includes 10 files.

?save temp

Temp SearchSave "TB006" stored

?b n1:n2;exs

24jun92 17:34:47 User214300 Session B25.2

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S1 25 (VIRTUAL ENVIRONMENT)

?t s1/5/1-25

1/5/1 (Item 1 from file: 2)

04169640 INSPEC Abstract Number: C9207-7810C-033

Title: Virtual worlds and their role in investigating change in cognitive models of motion

Author(s): Whitelock, D.; Holland, S.

Author Affiliation: Inst. of Educ. Technol., Open Univ., Milton Keynes, UK

Conference Title: IEE Colloquium on 'Using Virtual Worlds' (Digest No.093) p.2/1-5

Publisher: IEE, London, UK

Publication Date: 1992 Country of Publication: UK 40 pp.

Conference Sponsor: IEE

Conference Date: 15 April 1992 Conference Location: London, UK

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: Research into children's ideas about physical phenomena has shown that these ideas are very different from those of the scientist. There is a large body of research data, mainly descriptive accounts of children's reasoning, which is not always easy to interpret. There is also

a difference of opinion about how these conceptions should be viewed: it is not clear whether children's ideas in dynamics should be described as systematic mental structures or as ad hoc temporary constructions. It is the authors' belief that commonsense ideas about motion can be represented as causal models which are different from the Newtonian view of motion. Student's failure to answer dynamics problems correctly reveals a lack in their knowledge of the causal principles that underly the formulas they have been taught. They believe that experiences that enable students to acquire accurate causal models will make them less likely to develop misconceptions, and better able to understand the principles underlying Newtonian mechanics. They hypothesise that a sequence of pre-designed activities carried out in a virtual environment with a head-tracking head-mounted display and a dataglove will lead students to build up an accurate qualitative model of the laws of motion more effectively than conventional computer simulations or instruction using physical apparatus such as found in schools. They propose to build a collection of virtual worlds designed to aid particular stages of acquiring accurate causal models of motion. (32 Refs)

Descriptors: computer aided instruction; computer graphics; human factors ; physics computing

Identifiers: computer aided instruction; physics education; mental structures; causal models; Newtonian mechanics; virtual environment; head-tracking head-mounted display; dataglove; laws of motion; computer simulations

Class Codes: C7810C (Computer-aided instruction); C6130B (Graphics techniques)

1/5/2 (Item 2 from file: 2)

04147751 INSPEC Abstract Number: C9206-7420-064

Title: Description of semantics of robot programming languages

Author(s): Zielinski, C.

Author Affiliation: Inst. of Autom. Control, Warsaw Univ. of Technol., Poland

Journal: Mechatronics vol.2, no.2 p.171-98

Publication Date: April 1992 Country of Publication: UK

CODEN: MECHER ISSN: 0957-4158

U.S. Copyright Clearance Center Code: 0957-4158/92/\$5.00+0.00

Language: English Document Type: Journal Paper (JP)

Treatment: Practical (P); Theoretical (T)

Abstract: The paper presents a formal method of defining semantics of robot programming language instructions. These languages are divided into three levels: joint, manipulator and object level. As a criterion of this division, the abstract notion to which the instructions of the languages refer is used. Moreover, depending on the precision of the semantics definition of a particular language, these languages are classified into three types (point-to-point, bonded-path and continuous-path). The method described is capable of defining semantics of instructions independently of the type or the level of the language considered. To achieve this a concept of virtual environment is introduced. The description of the state of the system, consisting of the virtual environment, data base, variables and program control flow subsystem, is considered on each level. The object level languages are dealt with in particular detail. The attributes of the objects as well as the relations between them are taken into account. The method does not depend on the type of industrial robot used. (10 Refs)

Descriptors: high level languages; robot programming

Identifiers: joint level languages; manipulator level languages; point-to-point languages; bounded-path languages; continuous-path languages

; semantics; robot programming languages; virtual environment; virtual environment; data base; program control flow subsystem; object level languages

Class Codes: C7420 (Control engineering); C3390 (Robotics); C6140D (High level languages)

1/5/3 (Item 3 from file: 2)

04052607 INSPEC Abstract Number: C9202-6180-018

Title: Progress in artificial reality technology

Author(s): Hirose, M.

Journal: Journal of the Japan Society of Precision Engineering vol.57, no.8 p.1315-20

Publication Date: Aug. 1991 Country of Publication: Japan

CODEN: JJPEAD ISSN: 0912-0289

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: The author discusses artificial reality, virtual environment, human interface, realistic sensation, simulation, computer graphics and virtual holography. (8 Refs)

Descriptors: computer graphics; digital simulation; user interfaces

Identifiers: artificial reality technology; virtual environment; human interface; realistic sensation; simulation; computer graphics; virtual holography

Class Codes: C6180 (User interfaces); C6130B (Graphics techniques); C7420 (Control engineering)

1/5/4 (Item 4 from file: 2)

04046488 INSPEC Abstract Number: C9201-7460-032

Title: Image generation for a virtual environment

Author(s): McDermott, R.C.

Conference Title: IEE Colloquium on 'Real World Visualisation - Virtual World - Virtual Reality (Digest No.197) p.5/1-2

Publisher: IEE, London, UK

Publication Date: 1991 Country of Publication: UK 52 pp.

Conference Sponsor: IEE

Conference Date: 26 Sept. 1991 Conference Location: London, UK

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: The overall objective of this work was the study of the visual aspect of the man-machine interface for future aircraft. The primary concept was that of the virtual cockpit in which information is presented in ways which are easily interpreted, unambiguous, economical and spatially consistent with the external world. Such an environment should allow experimentation in laboratory conditions or use in simulation of real activities. The work was limited to the visual element, although a full environment would include, for example, tactile and auditory elements. (0 Refs)

Descriptors: aerospace computing; aircraft instrumentation; computer animation; graphical user interfaces

Identifiers: image generation; virtual environment; visual aspect; man-machine interface; aircraft; virtual cockpit; simulation

Class Codes: C7460 (Aerospace engineering); C6180G (Graphical user interfaces)

1/5/5 (Item 5 from file: 2)

04034670 INSPEC Abstract Number: C9201-3370L-001

Title: Tele-existence

Author(s): Tachi, S.

Journal: Journal of the Society of Instrument and Control Engineers  
vol.30, no.6 p.465-71

Publication Date: June 1991 Country of Publication: Japan

CODEN: KESEA4 ISSN: 0453-4662

Language: Japanese Document Type: Journal Paper (JP)

Treatment: General, Review (G)

(13 Refs)

Descriptors: computer animation; graphical user interfaces; telecontrol

Identifiers: tele-existence; tele-presence; artificial reality; virtual reality; virtual environment; real world; virtual world; tele-reality; physical world; teleoperated vehicle; teleoperated robot; Naval Ocean Systems Center

Class Codes: C3370L (Remote signalling, dispatching and safety devices); C6180G (Graphical user interfaces); C7420 (Control engineering); C5540B (Interactive-input devices)

1/5/6 (Item 6 from file: 2)

04034669 INSPEC Abstract Number: C9201-6180G-002

Title: Virtual reality and collaboration

Author(s): Hirose, M.

Journal: Journal of the Society of Instrument and Control Engineers  
vol.30, no.6 p.457-64

Publication Date: June 1991 Country of Publication: Japan

CODEN: KESEA4 ISSN: 0453-4662

Language: Japanese Document Type: Journal Paper (JP)

Treatment: General, Review (G)

(10 Refs)

Descriptors: computer animation; graphical user interfaces; groupware

Identifiers: virtual reality; human interface; virtual environment; communication; realistic sensation; Nouvelle Vague; head mounted display; collaboration

Class Codes: C6180G (Graphical user interfaces); C7100 (Business and administration); C5540B (Interactive-input devices)

1/5/7 (Item 7 from file: 2)

04015307 INSPEC Abstract Number: B91079872

Title: Combat vehicle stereo HMD

Author(s): Rallison, R.D.; Schicker, S.R.

Author Affiliation: Ralcon Corp., Paradise, UT, USA

Journal: Proceedings of the SPIE - The International Society for Optical Engineering  
vol.1456 p.179-90

Publication Date: 1991 Country of Publication: USA

CODEN: PSISDG ISSN: 0277-786X

U.S. Copyright Clearance Center Code: 0 8194 0555 8/91/\$4.00

Conference Title: Large-Screen-Projection, Avionic and Helmet-Mounted Displays

Conference Sponsor: SPIE; Soc. Imaging Sci. Technol

Conference Date: 26-28 Feb. 1991 Conference Location: San Jose, CA, USA

Language: English Document Type: Conference Paper (PA); Journal Paper (JP)

Treatment: Practical (P)

Abstract: Combat vehicles of the future may be devoid of direct vision ports but will contain multiple displays creating a virtual environment. The transition from real to virtual can be facilitated by the use of a helmet mounted display (HMD) that projects a portion of the virtual

environment over the real world. The authors present a simple, light weight color stereo projection system that has the potential for meeting most of the desired characteristics at a reasonable cost. Imaging is accomplished using CR39 ophthalmic substrates off axis 15 degrees and distorted to correct for astigmatism. The images from two sources are transferred to the focuses by coherent fiber image conduit shaped at one end to minimize field curvature. The demonstrated field of view (FOV) is 15v\*40h degrees using readily available image conduit and colored transparencies, maximum FOV is 60v\*90h degrees. (7 Refs)

Descriptors: display devices; fibre optics; military equipment

Identifiers: combat vehicle; fold mirror; combiner; fiber faceplate; catface; stereo HMD; multiple displays; virtual environment; helmet mounted display; CR39 ophthalmic substrates; astigmatism; coherent fiber image conduit; field curvature; field of view; colored transparencies

Class Codes: B7260 (Display technology and systems); B7910 (Military circuits, components, and equipment); B4125 (Fibre optics)

1/5/8 (Item 8 from file: 2)

03928642 INSPEC Abstract Number: C91050018

Title: A study on visualization of control software design

Author(s): Hirose, M.; Amari, H.

Author Affiliation: Tokyo Univ., Japan

Conference Title: Computer-Aided Cooperative Product Development. MIT-JSME Workshop Proceedings p.584-603

Editor(s): Sriram, D.; Logcher, R.; Fukuda, S.

Publisher: Springer-Verlag, Berlin, Germany

Publication Date: 1991 Country of Publication: West Germany vii+630

pp.

ISBN: 3 540 54008 3

Conference Sponsor: Japanese Soc. Mech. Eng.; MIT; Bell Atlantic Knowledge Syst

Conference Date: 20-21 Nov. 1989 Conference Location: Cambridge, MA, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: Virtual environments for software visualization are discussed. Visual representation plays an important role in coordinating or managing large scale system developments. First, the problem of software design for large scale control systems such as the control system for the distribution of regional electric power is discussed from a 'needs' point of view. It is emphasized that the conventional methodology is no longer sufficient for recent large and complex computer system designs. Second, the use of visualization technology is introduced as a solution to the software crisis mentioned above. A method of mapping from an original logical representation into a visual representation is proposed. Finally, implementation of the idea is discussed from a 'seeds' point of view. By using this so called 'virtual environment' technology, the authors could develop a non-text based programming environment. (5 Refs)

Descriptors: control system CAD; programming environments; virtual machines; visual programming

Identifiers: control software design; software visualization; large scale system developments; large scale control systems; regional electric power; complex computer system designs; visualization technology; original logical representation; visual representation; virtual environment; non-text based programming environment

Class Codes: C7420 (Control engineering); C6115 (Programming support); C6110 (Systems analysis and programming)

1/5/9 (Item 9 from file: 2)  
03905230 INSPEC Abstract Number: C91042328  
Title: Connectionist modelling of skill dynamics  
Author(s): Ridsdale, G.  
Author Affiliation: Comput. Sci. Dept., Utah Univ., Salt Lake City, UT, USA  
Journal: Journal of Visualization and Computer Animation vol.1, no.2  
p.66-72  
Publication Date: Dec. 1990 Country of Publication: UK  
CODEN: JVCAEO ISSN: 1049-8907  
U.S. Copyright Clearance Center Code: 1049-8907/90/020066-07\$05.00  
Language: English Document Type: Journal Paper (JP)  
Treatment: Practical (P)  
Abstract: The paper discusses a method for modelling skilled action for synthetic actors in a virtual environment. The method guides lower-level motor skills from a connectionist model of skill memory, implemented as collections of trained neural networks. The relationship between this work and that of other projects in task-level animation is discussed, the principles of connectionist learning are explained, and a series of experiments testing the concept of connectionist skill modelling are reviewed. (38 Refs)  
Descriptors: computer animation; learning systems; neural nets  
Identifiers: skill dynamics; skilled action; synthetic actors; virtual environment; lower-level motor skills; skill memory; trained neural networks; task-level animation; connectionist learning; connectionist skill modelling  
Class Codes: C6130B (Graphics techniques); C1230 (Artificial intelligence); C1240 (Adaptive system theory)

1/5/10 (Item 10 from file: 2)  
03823229 INSPEC Abstract Number: B91020876, C91018732  
Title: Implementation and integration of a counterbalanced CRT-based stereoscopic display for interactive viewpoint control in virtual environment applications  
Author(s): McDowall, I.E.; Bolas, M.; Pieper, S.; Fisher, S.S.; Humphries, J.  
Author Affiliation: Aerosp. Human Factors Res. Div., NASA Ames Res. Center, Moffett Field, CA, USA  
Journal: Proceedings of the SPIE - The International Society for Optical Engineering vol.1256 p.136-46  
Publication Date: 1990 Country of Publication: USA  
CODEN: PSISDG ISSN: 0277-786X  
Conference Title: Stereoscopic Displays and Applications  
Conference Sponsor: SPIE; SPSE  
Conference Date: 12-14 Feb. 1990 Conference Location: Santa Clara, CA, USA  
Language: English Document Type: Conference Paper (PA); Journal Paper (JP)  
Treatment: Practical (P)  
Abstract: The authors describe the implementation and integration of the Ames counterbalanced CRT-based stereoscopic viewer (CCSV). The CCSV was developed as a supplementary viewing device for the Virtual interface environment workstation project at NASA Ames in order to provide higher resolution than is possible with LCD based head-mounted viewers. The CCSV hardware consists of a counterbalanced kinematic linkage, dual-CRT based stereoscopic viewer with wide angle optics, video electronics box,



dedicated microprocessor system monitoring joint angles in the linkage, host computer interpreting the sensor values and running the application which renders right and left views for the viewer's CRTs. CCSV software includes code resident on the microprocessor system, host computer device drivers to communicate with the microprocessor, a kinematic module to compute viewer position and orientation from sensor values, graphics routines to change the viewing geometry to match viewer optics and movements, and an interface to the application. (15 Refs)

Descriptors: cathode-ray tube displays; computerised instrumentation; engineering workstations; interactive systems; microcomputer applications; virtual machines

Identifiers: dual viewer; counterbalanced CRT-based stereoscopic display; interactive viewpoint control; virtual environment; Virtual interface environment workstation; NASA; dedicated microprocessor

Class Codes: B7260 (Display technology and systems); B7210B (Automatic test and measurement systems); C7410H (Instrumentation); C5540 (Terminals and graphic displays); C7430 (Computer engineering)

1/5/11 (Item 11 from file: 2)

03515874 INSPEC Abstract Number: B90004111

Title: A helmet-mounted virtual environment display system

Author(s): Rebo, R.K.; Amburn, P.

Author Affiliation: Air Force Inst. of Technol., Wright-Patterson AFB, OH, USA

Journal: Proceedings of the SPIE - The International Society for Optical Engineering vol.1116 p.80-4

Publication Date: 1989 Country of Publication: USA

CODEN: PSISDG ISSN: 0277-786X

Conference Title: Helmet-Mounted Displays

Conference Sponsor: SPIE

Conference Date: 28-29 March 1989 Conference Location: Orlando, FL, USA

Language: English Document Type: Conference Paper (PA); Journal Paper (JP)

Treatment: Practical (P)

Abstract: The authors present a simple, inexpensive design of a helmet-mounted color display system. The system can be mounted on a variety of helmets, including a bicycle helmet. Color LCD displays are used. The optical decisions are discussed as well as limitations of the system. The entire helmet-mounted system cost about \$1000 to build (1989 prices) using off the shelf, readily available hardware, with the exception of the Polhemus tracking device. Issues of depth perception are discussed. Predictive tracking is implemented using a simple Kalman filter. (12 Refs)

Descriptors: aircraft instrumentation; Kalman filters; liquid crystal displays; tracking systems

Identifiers: predictive tracking; aircraft helmet; liquid crystal display; motorcycle helmet; virtual environment; helmet-mounted color display system; bicycle helmet; depth perception; Kalman filter

Class Codes: B7260 (Display technology and systems); B6140 (Signal processing and detection); B4150D (Liquid crystal devices); B7630 (Avionic systems and instrumentation)

1/5/12 (Item 12 from file: 2)

03382659 INSPEC Abstract Number: C89038521

Title: Through the looking glass (Virtual Environmental Display System)

Author(s): Watkins, R.

Journal: Computer Graphics World vol.11, no.1 p.40-2

T 385  
C 862

Publication Date: Jan. 1988 Country of Publication: USA

CODEN: CGWODH ISSN: 0271-4159

Language: English Document Type: Journal Paper (JP)

Treatment: General, Review (G)

Abstract: At NASA Ames Research Center, the Aerospace Human Factors Research Division has developed a helmet-mounted display device that, together with audio and tactile cues, puts the wearer in a computer-generated world, a virtual environment. The author looks at the Virtual Environment Display System (VEDS). (0 Refs)

Descriptors: computer graphic equipment; digital simulation; display devices

Identifiers: digital simulation; computer graphic equipment; display devices; NASA; helmet-mounted display device; computer-generated world; virtual environment; Virtual Environment Display System; VEDS

Class Codes: C5540 (Terminals and graphic displays); C7400 (Engineering

1/5/13 (Item 13 from file: 2)

03166776 INSPEC Abstract Number: C88040233

Title: From DataGlove to DataSuit

Author(s): Lasko-Harvill, A.; Blanchard, C.; Smithers, W.; Harvill, Y.; Coffman, A.

Author Affiliation: VPL Res. Inc., Redwood City, CA, USA

Conference Title: Digest of Papers: COMPCON Spring 88. Thirty-Third IEEE Computer Society International Conference (Cat. No.88CH2539-5) p.536-8

Publisher: IEEE Comput. Soc. Press, Washington, DC, USA

Publication Date: 1988 Country of Publication: USA xvi+549 pp.

ISBN: 0 8186 0828 5

U.S. Copyright Clearance Center Code: CH2539-5/88/0000-0536\$01.00

Conference Sponsor: IEEE

Conference Date: 29 Feb.-3 March 1988 Conference Location: San Francisco, CA, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P); Product Review (R)

Abstract: The development of an interface system that captures, records, and renders to the movement of the human body is reported. Sensors on the DataSuit, a garment covering the body from neck to ankles, register the position and orientation of the joints of the body. An absolute positioning system tracks the movement of the individual in six degrees of freedom within the room is reported. Applications of the DataSuit include use as a user input device for teleoperation, telepresence, human performance modeling, and animation. (6 Refs)

Descriptors: man-machine systems; position control; position measurement; telecontrol equipment; user interfaces

Identifiers: human body movement; user interface devices; virtual environment; DataGlove; DataSuit; absolute positioning system; six degrees of freedom; user input device; teleoperation

Class Codes: C3120C (Spatial variables); C3250 (Telecontrol and telemetering components); C5540B (Interactive-input devices)

1/5/14 (Item 14 from file: 2)

02895512 INSPEC Abstract Number: C87035319

Title: Expert system architecture for battle management

Author(s): Entner, R.S.; Tosh, D.E.

Conference Title: Expert Systems in Government Symposium (Cat. No.86CH2349-9) p.16-21

Publisher: IEEE Comput. Soc. Press, Washington, DC, USA

Publication Date: 1986 Country of Publication: USA xiii+466 pp.

ISBN: 0 8186 0738 6

U.S. Copyright Clearance Center Code: CH2349-9/86/0000-0016\$01.00

Conference Sponsor: IEEE; AIAA

Conference Date: 22-24 Oct. 1986 Conference Location: McLean, VA, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Applications (A); General, Review (G); Practical (P)

Abstract: The authors address the requirements for battle management computing architectures for use in next-generation military systems. These systems will use combinations of computers, including scalar, vector, numeric and symbolic processors arranged as distributed multiprocessors and in parallel processing arrays. A notational approach is presented for constructing an open, virtual environment for battle management. (0 Refs)

Descriptors: decision support systems; distributed processing; expert systems; military computing; military systems; multiprocessing systems

Identifiers: virtual network operating system; command and control systems; battle management computing architectures; military systems; distributed multiprocessors; parallel processing arrays; virtual environment

Class Codes: C5220 (Computer architecture); C5440 (Multiprocessor systems and techniques); C5620 (Computer networks and techniques); C7150 (Military)

1/5/15 (Item 15 from file: 2)

02735359 INSPEC Abstract Number: C86049541

Title: A dynamic approach to the robotic design cycle

Author(s): Fitzhorn, P.A.; Troxell, W.O.

Author Affiliation: Dept. of Mech. Eng., Colorado State Univ., Ft. Collins, CO, USA

Conference Title: Proceedings 1986 IEEE International Conference on Robotics and Automation (Cat. No.86CH2282-2) p.353-8 vol.1

Publisher: IEEE Comput. Soc. Press, Washington, DC, USA

Publication Date: 1986 Country of Publication: USA 3 vol. xxxvi+2051 pp.

ISBN: 0 8186 0695 9

U.S. Copyright Clearance Center Code: CH2282-2/86/0000-0353\$01.00

Conference Sponsor: IEEE

Conference Date: 7-10 April 1986 Conference Location: San Francisco, CA, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Applications (A)

Abstract: The use of dynamic, high-performance computer graphics equipment significantly enhances the capabilities of the engineer in the design and analysis of robotic mechanisms. The authors discuss how these enhancements should be making an impact on the engineering design methodology for robotic manipulators. They show that the use of high-performance dynamic graphics systems can help to alleviate design problems by providing the capability to model robots of interest and visually analyze their motion relative to the appropriate surroundings. This virtual environment allows the design engineer to interact with conceptual models of 3D objects in a dynamic, virtual 3D world. (7 Refs)

Descriptors: computer graphics; control system CAD; digital simulation; robots

Identifiers: CAD; robotic design cycle; computer graphics; engineering design methodology; robotic manipulators; dynamic graphics systems; virtual environment; conceptual models

Class Codes: C3390 (Robotics); C6130B (Graphics techniques); C7420 (

## Control engineering)

1/5/16 (Item 16 from file: 2)  
02696885 INSPEC Abstract Number: C86039777  
Title: Hierarchy of robot programming languages and definitions of the semantics of chosen instructions  
Author(s): Zielinski, C.  
Journal: Archiwum Automatyki i Telemechanika vol.30, no.3-4 p. 387-405  
Publication Date: 1985 Country of Publication: Poland  
CODEN: AATMAV ISSN: 0004-072X  
Language: Polish Document Type: Journal Paper (JP)  
Treatment: Theoretical (T)  
Abstract: Presents a formal method for defining the semantics of robot language instructions. Due to the use of the concept of virtual environment, the method is independent of the type of robot as well as of the level of the language. Four levels of robot programming languages are considered to exist. Moreover, the languages considered are divided into two classes: point to point languages and continuous path languages. The paper presents some examples illustrating how the semantics of robot language instructions are defined for languages of different type and level. (12 Refs)  
Descriptors: programming languages; programming theory; robots  
Identifiers: robot programming languages; semantics; robot language instructions; virtual environment; point to point languages; continuous path languages  
Class Codes: C4240 (Programming and algorithm theory); C6140 (Programming languages)

1/5/17 (Item 17 from file: 2)  
02661805 INSPEC Abstract Number: C86029982  
Title: Use of main storage as a fast access paging device  
Journal: IBM Technical Disclosure Bulletin vol.28, no.5 p.1957-62  
Publication Date: Oct. 1985 Country of Publication: USA  
CODEN: IBMTAA ISSN: 0018-8689  
Language: English Document Type: Journal Paper (JP)  
Treatment: Applications (A); New Developments (N); Practical (P)  
Abstract: In a virtual environment, fast access magnetic media are required for paging to get an acceptable level of performance. (0 Refs)  
Descriptors: virtual storage  
Identifiers: main storage usage; virtual storage; fast access paging device; virtual environment; fast access magnetic media; performance  
Class Codes: C6120 (File organisation)

1/5/18 (Item 18 from file: 2)  
02619187 INSPEC Abstract Number: C86019274  
Title: Whither VM?  
Author(s): Kutnick, D.  
Journal: Datamation vol.31, no.23 p.72-8  
Publication Date: 1 Dec. 1985 Country of Publication: USA  
CODEN: DTMNAT ISSN: 0011-6963  
Language: English Document Type: Journal Paper (JP)  
Treatment: General, Review (G)  
Abstract: IBM's Virtual Machine operating system promises to take on strategic importance for mainframes and minis. The major reason for VM's increasing popularity in the IBM environment is its versatility. It is IBM's only extensible operating system-capable of running on 3090s all the

way down to the AT/370. In many ways-its user-friendly facilities and its interactivity, for instance-VM is similar to the better minicomputer operating systems such as DEC's VMS for VAX. Moreover, VM's virtual environment can support other operating systems as guests-MVS, DOS, VS/1, Unix, and (in the near future) PC/DOS-to enable multiple OS coexistence, or to facilitate OS migration (e.g. from DOS to MVS). Because it is highly interactive, and can support multiple users in a timesharing environment, VM is IBM's primary OS for technical environments (scientific, engineering, R&D), and its CMS facility is utilized frequently for program development (even where actual execution is under MVS/TSO). IBM's internal developers make extensive use of VM. (0 Refs)

Descriptors: IBM computers; operating systems (computers); virtual machines

Identifiers: Virtual Machine operating system; mainframes; IBM environment; minicomputer operating systems; virtual environment; DOS; MVS; CMS facility

Class Codes: C6150J (Operating systems)

1/5/19 (Item 19 from file: 2)

02111480 INSPEC Abstract Number: B83051482, C83036137

Title: The Interactive Movie Map: surrogate travel with the aid of dynamic aerial overviews

Author(s): Mohl, R.

Author Affiliation: Architecture Machine Group, MIT, Cambridge, MA, USA

Conference Title: Midcon/80 Conference Record p.10/5/1-7

Publisher: Electron. Conventions, El Segundo, CA, USA

Publication Date: 1980 Country of Publication: USA 902 pp.

Conference Date: 4-6 Nov. 1980 Conference Location: Dallas, TX, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Applications (A)

Abstract: A working system for movement through the space of a virtual environment under full interactive computer control is presented. The purpose is to enable users to learn about unfamiliar locales by 'travelling' around at will through sequences of photographic footage and 'helicoptering' above personalized reference maps and aerial photos. The visual material is stored on optical video disc and supplemented with run time generated computer graphics. (4 Refs)

Descriptors: computer aided instruction; computerised control; interactive systems; video and audio discs

Identifiers: aerial photographs; Interactive Movie Map; surrogate travel; dynamic aerial overviews; virtual environment; interactive computer control ; photographic footage; reference maps; optical video disc; run time generated computer graphics

Class Codes: B6430H (Video recording); B6430J (Applications of television systems); C3370P (Video and sound recording); C5540 (Terminals and graphic displays); C7810C (Computer-aided instruction)

1/5/20 (Item 20 from file: 2)

02046950 INSPEC Abstract Number: C83021633

Title: Planning for software tool implementation: experience with Schemacode

Author(s): Robillard, P.N.; Plamondon, R.

Author Affiliation: Ecole Polytech., Montreal, Que., Canada

Conference Title: AFIPS Conference Proceedings. Vol.51. 1982 National Computer Conference p.749-57

Editor(s): Morgan, H.L.

Publisher: AFIPS Press, Arlington, VA, USA

Publication Date: 1982 Country of Publication: USA xi+843 pp.  
Conference Date: 7-10 June 1982 Conference Location: Houston, TX, USA  
Language: English Document Type: Conference Paper (PA)  
Treatment: Applications (A)

Abstract: The interactive tool called Schemacode assists users in the development, documentation, and structured coding of programs. Its unique property of word-graphic type of communication can be of great help during the main phase of program development: defining the control structure of the program at different levels of refinement. A Schematic Pseudocode which represents the control skeleton of the program constitutes the very-high-level language input. Construction of the schematic structure and its translation into an appropriate language are the two main functions of Schemacode. These transformations involve editing, formatting, cross referencing, and structure checking. The use of a formal language appears only at the end of the development, after the logic of the problem has been solved. A real advantage provided by Schemacode is that every program developed has a unique up-to-date documentation and listing. However, modest changes are made in the way programming is done. An integration plan is specifically designed to minimize disturbances in the work milieu where Schemacode is to be implemented and is thus effected in three phases: creation first of a virtual environment, then of linked environment, and finally of an integrated environment. The virtual environment promotes the introduction of the methodology, the linked environment favors an interactive process for learning about the tool, and the integrated environment leads the new users to autonomous control of Schemacode. (13 Refs)

Descriptors: program processors; software engineering; text editing

Identifiers: text editing; software engineering; program processors; software tool implementation; Schemacode; development; documentation; structured coding; control structure; very-high-level language input; editing; formatting; cross referencing; structure checking; formal language; programming; virtual environment; linked environment; integrated environment

Class Codes: C6150C (Compilers, interpreters and other processors)

1/5/21 (Item 21 from file: 2)  
00972734 INSPEC Abstract Number: C76027065  
Title: Toward the understandability of an operating system  
Author(s): Varney, R.C.  
Author Affiliation: Bell Labs., Holmdel, NJ, USA  
Journal: Computer Journal vol.19, no.3 p.213-15  
Publication Date: Aug. 1976 Country of Publication: UK  
CODEN: CMPJA6 ISSN: 0010-4620  
Language: English Document Type: Journal Paper (JP)  
Treatment: Practical (P)

Abstract: Design considerations are presented for the construction of an operating system. (This approach emphasises the need to understand the interrelationships among all operating system components to facilitate the inevitable growth and development of a useful system.) The concept of a process and a resource are defined in such a way that a resource-to-process concept is developed, which is later used to provide an 'individualised' virtual environment for a process. Terminology is introduced to distinguish between so-called type S and type M resources, which must be treated differently for resource sharing. The levels of abstraction are described for the tree structured operating system that evolved from the design considerations. Within the tree, resource sharing is allowed and controlled by a communication language and so-called resource tables. Since the system

was designed for use on a PDP 11/45, the basic components of its tree are given. It is then suggested that the tree presented is, in fact, a basic framework upon which different specific operating systems may be built. (10 Refs)

Descriptors: operating systems (computers)

Identifiers: operating system; virtual environment; resource sharing; tree; resource tables; PDP 11/45; type S resources; design; type M resources

Class Codes: C6150J (Operating systems)

1/5/22 (Item 22 from file: 2)

00423903 INSPEC Abstract Number: C72019118

Title: Virtual input/output in a virtual environment

Author(s): Ancilotti, P.; Cavina, R.; Lijtmaer, N.

Author Affiliation: CNR, Pisa, Italy

Conference Title: Proceedings of the 2nd International Computing Symposium p.302-12

Publisher: Federazione della Assoc. Sci & Tecniche, Milan, Italy

Publication Date: 1972 Country of Publication: Italy xiii+634 pp.

Conference Sponsor: ACM, Assoc. Italiana Calcolo Automatico; et al

Conference Date: 12-14 April 1972 Conference Location: Venice, Italy

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: The purpose of this paper is to investigate the possibility of allowing an I/O channel, regarded as a special purpose processor, to execute a program allocated in the user's virtual space. The environment is a multiprogramming-multiaccess system with a virtual memory implemented by paging. The proposed system is outlined, and the extra logical requirements for the channel are pointed out. The most relevant advantages are: I) The process information is treated in the virtual space, homogeneously; II) channel programs and their priorities can be dynamically modified; III) lower system overhead and greater flexibility are achieved. (13 Refs)

Descriptors: input-output programs; multiprogramming

Identifiers: multiprogramming and multiaccess system; virtual input/output; virtual environment; I/O channel; special purpose processor; virtual memory; paging

Class Codes: C6150J (Operating systems)

1/5/23 (Item 1 from file: 8)

03414584 E.I. Monthly No: EIM9204-017615

Title: Virtual environment technology (Invited Paper).

Author: Zeltzer, David L.

Corporate Source: Media Lab./MIT, Cambridge, MA, USA

Conference Title: Extracting Meaning from Complex Data: Processing, Display, Interaction II

Conference Location: San Jose, CA, USA Conference Date: 1991 Feb 26-28

Sponsor: SPIE - Int Soc for Opt Engineering, Bellingham, WA, USA; IS&T Soc for Imaging Science & Technology

E.I. Conference No.: 15379

Source: Proceedings of SPIE - The International Society for Optical Engineering v 1459. Publ by Int Soc for Optical Engineering, Bellingham, WA, USA. p 86-86

Publication Year: 1991

CODEN: PSISDG ISSN: 0277-786X ISBN: 0-8194-0558-2

Language: English

Document Type: PA; (Conference Paper) Treatment: T; (Theoretical); A; (Applications)

Journal Announcement: 9204

Abstract: Since the late 1960s and early 1970s researchers have been building novel display devices - including head-mounted displays (HMDs) - and a variety of manual input devices, including force input and output. With the advent of powerful graphic workstations, and relatively inexpensive HMDs and glove-like input devices, however, interest in 'virtual environments' seems to be rising exponentially. In this paper the key components of a virtual environment - autonomy, interaction and presence - are described. Autonomy is a qualitative measure of the capability of computational models to act and react to simulated events and stimuli. Interaction measures the degree of access to model parameters at runtime, ranging from batch processing with no interaction to comprehensive, real-time access to all model parameters. Presence is a rough measure of the number and fidelity of available sensory input and output channels. Work on representing and controlling synthetic autonomous agents for virtual environments will be briefly reviewed. Videotaped examples will be shown. 7 Refs.

Descriptors: \*COMPUTER PERIPHERAL EQUIPMENT--\*Graphics; COMPUTER GRAPHICS --Interactive

Identifiers: VIRTUAL ENVIRONMENT; COMPUTATIONAL MODELS; ABSTRACT ONLY

Classification Codes: 722 (Computer Hardware)

72 (COMPUTERS & DATA PROCESSING)

1/5/24 (Item 2 from file: 8)

03368356 E.I. Monthly No: EIM9201-003356

Title: Using velocity control to navigate 3D graphical environments. A comparison of three interfaces.

Author: Ware, Colin; Slipp, Leonard

Corporate Source: Univ of New Brunswick, Fredericton, NB, Can

Conference Title: Proceedings of the Human Factors Society 35th Annual Meeting Part 1 (of 2)

Conference Location: San Francisco, CA, USA Conference Date: 1991 Sep 2-6

Sponsor: Bay Area Chapter

E.I. Conference No.: 15389

Source: Proceedings of the Human Factors Society v 1. Publ by Human Factors Soc Inc, Santa Monica, CA, USA. p 300-304

Publication Year: 1991

CODEN: PHFSDQ ISSN: 0163-5182

Language: English

Document Type: PA; (Conference Paper) Treatment: T; (Theoretical); X; (Experimental)

Journal Announcement: 9201

Abstract: Three velocity control interfaces to three dimensional virtual environments are compared. The interface devices are: a six degree of freedom position sensor, a six degree of freedom isometric joystick, and a conventional mouse in conjunction with a soft control panel displayed on the monitor. In each interface the devices are used to control velocity, and all make use of a quadratic function to map the input to the viewpoint velocity. We use two structured exploration tasks to assess the usability of the different interfaces. In the first task an interviewing technique is used in conjunction with an exploration task which involved examining widely spaced details of the 3D scene. The second task is designed to reveal how well users can interact at different scales using the different devices. Subjects are required to navigate through a tube which varies over four orders of magnitude in size. The results show that subject's behavior is highly constrained by the local size of the tube: they maintained a



constant velocity relative to the local size of the tube. They also showed differences in the effectiveness of the different devices in determining traversal rate that the positioning device and the control panel were about equally effective for fast navigation, and both are better than the isometric joystick. (Author abstract) 10 Refs.

Descriptors: \*COMPUTER INTERFACES--\*Human Factors; COMPUTER GRAPHICS--Three Dimensional Graphics; COMPUTER PERIPHERAL EQUIPMENT--Mouse; SYSTEMS SCIENCE AND CYBERNETICS--Man Machine Systems; DISPLAY DEVICES; HUMAN ENGINEERING--Behavioral Research

Identifiers: VELOCITY CONTROL; POSITION SENSOR; JOYSTICK; VIRTUAL ENVIRONMENT

Classification Codes: 722 (Computer Hardware); 723 (Computer Software); 461 (Biotechnology); 731 (Automatic Control Principles)

72 (COMPUTERS & DATA PROCESSING); 46 (BIOENGINEERING); 73 (CONTROL ENGINEERING)

1/5/25 (Item 3 from file: 8)

03355098 E.I. Monthly No: EIM9112-066782

Title: Auditory image processing in a virtual acoustic environment.

Author: Kulkarni, Abhijit; Colburn, H. Steven

Corporate Source: Dept of Biomed Eng, Boston Univ, MA, USA

Conference Title: Proceedings of the 1991 IEEE 17th Annual Northeast Bioengineering Conference

Conference Location: Hartford, CT, USA Conference Date: 1991 Apr 4-5

Sponsor: IEEE Engineering in Medicine and Biology Soc; Univ of Connecticut; Trinity College/Hartford Graduate Cent; Whitaker Foundation; Trinity College/Hartford Graduate Center; The Whitaker Foundation

E.I. Conference No.: 15500

Source: 91 Northeast Bioengineering Conf. Bioengineering, Proceedings of the Northeast Conference. Publ by IEEE, IEEE Service Center, Piscataway, NJ, USA (IEEE cat n 91CH2997-5). p 119-120

Publication Year: 1991

CODEN: BENYDB ISBN: 0-7803-0030-0

Language: English

Document Type: PA; (Conference Paper) Treatment: X; (Experimental)

Journal Announcement: 9112

Abstract: A system is described that simulates free-field source at different locations through headphones, and experiments that make use of that system are discussed. The system makes use of commercially available components and incorporates automatic compensation for head motion. It also allows an interactive mode in which the subject modifies the simulated acoustic environment by changing her/his hand position. Some preliminary experiments related to the relative importance of several factors that influence perceptions of auditory image space are reported. 4 Refs.

Descriptors: \*AUDITION; IMAGE PROCESSING; BIOMEDICAL ENGINEERING--Neurology

Identifiers: NINTENDO POWER GLOVE; FREE-FIELD SOURCE; HEAD MOTION; CONVOLVOTRON; IBM-COMPTIBLE PC/AT; VIRTUAL ENVIRONMENT

Classification Codes: 462 (Medical Engineering & Equipment); 941 (Acoustical & Optical Measuring Instruments); 723 (Computer Software); 461 (Biotechnology)

46 (BIOENGINEERING); 94 (INSTRUMENTS & MEASUREMENT); 72 (COMPUTERS & DATA PROCESSING)

?logoff

24jun92 17:42:48 User214300 Session B25.3

\$0.25 0.002 Hrs File2

\$17.60 22 Type(s) in Format 5

\$17.60 22 Types  
\$17.85 Estimated cost File2  
\$17.32 0.148 Hrs File8  
\$1.95 3 Type(s) in Format 5  
\$1.95 3 Types  
\$19.27 Estimated cost File8  
OneSearch, 2 files, 0.150 Hrs File0S  
\$0.45 TYMNET  
\$37.57 Estimated cost this search  
\$40.04 Estimated total session cost 0.204 Hrs.  
Logoff: level 29.01.05 B 17:42:49

=====

=====

Welcome to DIALOG  
Dialog level 29.01.05B

Last logoff: 24jun92 17:42:49

Logon file405 24jun92 18:13:31

\*\*\* TEXTLINE is now available. Begin TXTLN or TEXTLINE \*\*\*

SYSTEM:HOME

411

\*\*\* DIALOG HOMEBASE Main Menu \*\*\*

Enter an option number and press ENTER to view information on any item listed below; enter a BEGIN command to search in a different database.

- 1 Announcements (new databases, price changes, etc.)
- 2 DIALOG HOMEBASE Features
- 3 DIALOG Free File of the Month
- 4 DIALOG Database Information and Rates
- 5 Database Selection (DIALINDEX/OneSearch Categories)
- 6 DIALOG Command Descriptions
- 7 DIALOG Training Schedules and Seminar Descriptions
- 8 DIALOG Services
- 9 Begin DIALOG Menus (sm)
- 10 Begin DIALOG Business Connection (r)

Enter an option number or a BEGIN command and press ENTER.

/H = Help            /L = Logoff            /NOMENU = Command Mode

?

Menu system 5.35E ends.

24jun92 18:13:47 User214300 Session B26.1

\$0.06    0.004 Hrs FileHomeBase

\$0.06 Estimated cost FileHomeBase

\$0.01 TYMNET

\$0.07 Estimated cost this search

\$0.07 Estimated total session cost    0.004 Hrs.

File 411:DIALINDEX(tm)

sf eecomp

DIALINDEX(tm)

(Copr. DIALOG Info.Ser.Inc.)

\*\*\* DIALINDEX search results display in an abbreviated \*\*\*

\*\*\* format unless you enter the SET DETAIL ON command. \*\*\*

?

You have 10 files in your file list.

(To see banners, use SHOW FILES command.)

?s artificial reality

Your SELECT statement is:

s artificial reality

Items    File

-----

27       2: INSPEC 2\_69-92/9208W1

3       8: COMPENDEX PLUS\_1970-1992/JUN

3       582: JAPAN TECHNOLOGY \_ 1985-1992 MAY

3 files have one or more items; file list includes 10 files.

?rf

Your last SELECT statement was:  
S ARTIFICIAL REALITY

Ref	Items	File
----	-----	-----
N1	27	2: INSPEC 2_69-92/9208W1
N2	3	8: COMPENDEX PLUS_1970-1992/JUN
N3	3	582: JAPAN TECHNOLOGY _ 1985-1992 MAY
N4	0	6: NTIS_64-92/9207B2
N5	0	92: IHS INTERNATIONAL STANDARDS AND SPECIFICATIONS_
N6	0	103: ENERGY SCIENCE & TECHNOLOGY_1974-9205B1
N7	0	108: AEROSPACE _ 62-92/ISS13
N8	0	144: PASCAL_1973 - 1991 DEC
N9	0	275: COMPUTER DATABASE_83-92/ISSUE24
N10	0	675: COMPUTER ASAP_83-92/ISSUE 24

3 files have one or more items; file list includes 10 files.

?save temp

Temp SearchSave "TB007" stored

?b n1-n3;exs

24jun92 18:15:07 User214300 Session B26.2  
\$1.49 0.033 Hrs File411  
\$1.49 Estimated cost File411  
\$0.10 TYMNET  
\$1.59 Estimated cost this search  
\$1.66 Estimated total session cost 0.037 Hrs.

SYSTEM:OS - DIALOG OneSearch

File 2:INSPEC 2 69-92/9208W1  
(COPR. IEE 1992)

\*\*FILE002: Weekly updates and Alerts are now available in INSPEC!

File 8:COMPENDEX PLUS 1970-1992/JUN  
(COPR. ENGINEERING INFO. INC. 1992)

File 582:JAPAN TECHNOLOGY 1985-1992 MAY

Set	Items	Description
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Executing TB007

S1	33	ARTIFICIAL REALITY
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?t s1/5/1-33

1/5/1 (Item 1 from file: 2)

04164473 INSPEC Abstract Number: C9207-3390-022

Title: Sensors and sensing systems in advanced robotics

Author(s): Tachi, S.

Author Affiliation: Mech. Eng. Lab., MITI, Ibaraki, Japan

Conference Title: TRANSDUCERS '91. 1991 International Conference on  
Solid-State Sensors and Actuators. Digest of Technical Papers (Cat.  
No.91CH2817-5) p.601-6

Publisher: IEEE, New York, NY, USA

Publication Date: 1991 Country of Publication: USA 1089 pp.

ISBN: 0 87942 585 7

U.S. Copyright Clearance Center Code: 91CH2817-5/91/0000-0601\$01.00

Conference Sponsor: IEEE; Cerberus; Endress & Hauser; Ford; General  
Motors; Hewlett-Packard

Conference Date: 24-27 June 1991 Conference Location: San Francisco, CA, USA

Language: English Document Type: Conference Paper (PA)

Treatment: General, Review (G)

Abstract: The 1991 state of sensors and sensing systems in robotics is considered from the standpoint of the evolution of robots. Also, the Japanese national robot projects are reviewed with special emphasis on the large-scale national project 'Advanced Robot Technology' in hazardous environments. This project is considered to be the key link to the third generation of robotics. This project was successfully completed at the end of 1990. Several plans toward the next generation, e.g. space robotics, micro robotics, robots for natural disaster prevention, and neurorobotics, are examined. Sensors and sensing systems are expected to play an important role in the next generation of robotics. (9 Refs)

Descriptors: detectors; robots

Identifiers: artificial reality; fourth generation; robotics; Japanese national robot projects; hazardous environments; third generation; space robotics; micro robotics; natural disaster prevention; neurorobotics

Class Codes: C3390 (Robotics); C3240 (Transducers and sensing devices)

1/5/2 (Item 2 from file: 2)

04162526 INSPEC Abstract Number: C9207-6180-046

Title: Artificial reality and man-machine interface

Author(s): Hirose, M.

Journal: Journal of the Institute of Electrical Engineers of Japan  
vol.111, no.10 p.831-4

Publication Date: Oct. 1991 Country of Publication: Japan

CODEN: DGZAAW ISSN: 0020-2878

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: Artificial reality is the technology used to create a certain virtual world by presenting computer-aided synthesis information to the organs of visual, hearing and tactile sensations of human beings. Artificial reality has three elements; presence, interaction and autonomy. The first two of the elements belong to the field of human interface, and the last one to the field of artificial intelligence. The author describes the meanings of 3-dimensional space interface, creation of visual presence feelings (head mounted display, etc.), and reality feelings based on the senses of hearing and touch. (5 Refs)

Descriptors: computer animation; user interfaces

Identifiers: artificial reality; virtual reality; man-machine interface; computer-aided synthesis information; artificial intelligence; 3-dimensional space interface; visual presence feelings; head mounted display; reality feelings

Class Codes: C6180 (User interfaces); C6130B (Graphics techniques)

1/5/3 (Item 3 from file: 2)

04162519 INSPEC Abstract Number: C9207-6180-043

Title: Concept of fusion which leads to a simpler design of user interface

Author(s): Moriya, S.

Journal: Journal of the Institute of Electrical Engineers of Japan  
vol.111, no.10 p.805-8

Publication Date: Oct. 1991 Country of Publication: Japan

CODEN: DGZAAW ISSN: 0020-2878

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: The user interface is used to minimize mismatching between the

machine and the operator, and maximize productivity and the operator's satisfaction and comfort. The author considers the concepts of fusion to be the most important in design of the user interface, and shows three different examples of fusion in designing the user interface; fusion between the input field and output field (pen-based computer, touch screen, artificial reality, etc.), fusion between the human field and machine field, and fusion between different sections (fusion of system sections, media sections, data format sections, input/output channel sections or mode sections). As for the user friendliness of computer systems, there are five factors; flexibility, transparency, ease of use, ease of learning and reliability. (7 Refs)

Descriptors: user interfaces

Identifiers: user-friendly; user interface; pen-based computer; touch screen; artificial reality; data format; input/output channel

Class Codes: C6180 (User interfaces)

1/5/4 (Item 4 from file: 2)

04155866 INSPEC Abstract Number: C9206-6160Z-020

Title: A hypermedia information system to manage the activities in a research institute

Author(s): Allegra, M.; Di Giuseppe, O.; Mangiaracina, S.

Author Affiliation: Istituto di Tecnologie Didattiche e Formative, CNR, Palermo, Italy

Conference Title: Human Aspects in Computing. Design and Use of Interactive Systems and Work with Terminals. Proceedings of the Fourth International Conference on Human-Computer Interaction p.350-6

Editor(s): Bullinger, H.-J.

Publisher: Elsevier, Amsterdam, Netherlands

Publication Date: 1991 Country of Publication: Netherlands 2 vol. (xviii+xii+1367) pp.

ISBN: 0 444 88775 X

Conference Sponsor: IFIP; ACM; Eur. Strategic Programme for Res. Dev. Inf. Technol.; et al

Conference Date: 1-6 Sept. 1991 Conference Location: Stuttgart, Germany

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: Up to today dynamic hypermedia have been used in cooperative writing, collaboration work, on line publishing and authoring courseware. The authors present an example of information systems for managing and supporting activities in a research institute. The kind of information used in an institute is of a different type; furthermore some data have to be frequently updated. The system helps the workers to fill, to update and to have access to information. The authors believe hypermedia is suitable in effectively managing these data and they examine how it can be used to create information systems based on an artificial reality reflecting this kind of organization. They then describe the structure of HyperITDF system and its use in the institute. (10 Refs)

Descriptors: hypermedia; management information systems

Identifiers: activity management; hypermedia information system; research institute; dynamic hypermedia; artificial reality; HyperITDF system

Class Codes: C6160Z (Other DBMS); C7100 (Business and administration)

1/5/5 (Item 5 from file: 2)

04141466 INSPEC Abstract Number: B9206-6210P-003, C9206-7410F-017

Title: Application of visual presentation to communications

Author(s): Kishino, F.

Journal: Systems, Control and Information vol.36, no.1 p.26-32

Publication Date: Jan. 1992 Country of Publication: Japan

CODEN: SSEJE3 ISSN: 0916-1600

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: The following topics are discussed; communication with realistic sensations (telepresence), artificial reality, intelligent image coding, videoteleconferencing, and the human interface. (22 Refs)

Descriptors: computerised picture processing; encoding; teleconferencing; videotelephony; visual communication

Identifiers: visual presentation; communications; telepresence; artificial reality; intelligent image coding; videoteleconferencing; human interface

Class Codes: B6210P (Teleconferencing); B6210D (Telephony); B6140C (Optical information and image processing); B6120B (Codes); C7410F (Communications); C5260B (Computer vision and picture processing)

1/5/6 (Item 6 from file: 2)

04052613 INSPEC Abstract Number: C9202-6180-024

Title: Interface device for artificial reality

Author(s): Sato, M.

Journal: Journal of the Japan Society of Precision Engineering vol.57, no.8 p.1343-6

Publication Date: Aug. 1991 Country of Publication: Japan

CODEN: JJPEAD ISSN: 0912-0289

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: The author discusses artificial reality, virtual space, force feedback, perception cycle, the interface device, and CAD. (2 Refs)

Descriptors: CAD; computer graphics; digital simulation; user interfaces

Identifiers: SPIDAR; artificial reality; virtual space; force feedback; perception cycle; interface device; CAD

Class Codes: C6180 (User interfaces); C6130B (Graphics techniques); C7400 (Engineering)

1/5/7 (Item 7 from file: 2)

04052612 INSPEC Abstract Number: C9202-6180-023

Title: Application of artificial reality to manufacturing field

Author(s): Igoshi, M.

Journal: Journal of the Japan Society of Precision Engineering vol.57, no.8 p.1339-42

Publication Date: Aug. 1991 Country of Publication: Japan

CODEN: JJPEAD ISSN: 0912-0289

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: The author discusses artificial reality, a virtual factory, a virtual shop floor, an actual shopfloor, a realism generation device, the manufacturing field, an environment model, and a product model. (10 Refs)

Descriptors: computer graphics; digital simulation; manufacturing computer control; user interfaces

Identifiers: CIM; artificial reality; manufacturing; virtual factory; virtual shop floor; realism generation device; environment model; product model

Class Codes: C6180 (User interfaces); C6130B (Graphics techniques); C7420 (Control engineering); C3355 (Manufacturing processes)

1/5/8 (Item 8 from file: 2)

04052611 INSPEC Abstract Number: B9202-6140C-199, C9202-6180-022

Title: Artificial reality in facial expressions

Author(s): Harashima, H.

Journal: Journal of the Japan Society of Precision Engineering vol.57,  
no.8 p.1335-8

Publication Date: Aug. 1991 Country of Publication: Japan

CODEN: JJPEAD ISSN: 0912-0289

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: The author discusses artificial reality, facial expressions, intelligent image coding, a facial action coding system, and computer graphics. (10 Refs)

Descriptors: computer graphics; computerised picture processing; digital simulation; encoding; user interfaces

Identifiers: artificial reality; facial expressions; intelligent image coding; facial action coding system; computer graphics

Class Codes: B6140C (Optical information and image processing); B6120B (Codes); C6180 (User interfaces); C6130B (Graphics techniques); C5260B (Computer vision and picture processing)

1/5/9 (Item 9 from file: 2)

04052610 INSPEC Abstract Number: A9203-8732S-002, C9202-6180-021

Title: Artificial reality with visual effects

Author(s): Hatada, T.

Journal: Journal of the Japan Society of Precision Engineering vol.57,  
no.8 p.1330-4

Publication Date: Aug. 1991 Country of Publication: Japan

CODEN: JJPEAD ISSN: 0912-0289

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: The author discusses the sensation of reality, stereoscopy, depth perception, the visual field, binocular parallax, motion parallax, wide-field display, and 3D display. (4 Refs)

Descriptors: computer graphics; digital simulation; user interfaces; visual perception

Identifiers: reality sensation; artificial reality; stereoscopy; depth perception; visual field; binocular parallax; motion parallax; wide-field display; 3D display

Class Codes: A8732S (Psychophysics of vision, visual perception, binocular vision); C6180 (User interfaces); C6130B (Graphics techniques)

1/5/10 (Item 10 from file: 2)

04052609 INSPEC Abstract Number: C9202-6180-020

Title: Virtual reality and force display

Author(s): Iwata, H.

Journal: Journal of the Japan Society of Precision Engineering vol.57,  
no.8 p.1326-9

Publication Date: Aug. 1991 Country of Publication: Japan

CODEN: JJPEAD ISSN: 0912-0289

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: The author discusses virtual reality, artificial reality, force feedback, tactile sensors, haptics and interactive graphics. (8 Refs)

Descriptors: computer graphics; digital simulation; interactive systems; tactile sensors; telecontrol; user interfaces

Identifiers: force display; virtual reality; artificial reality; force feedback; tactile sensors; haptics; interactive graphics



Class Codes: C6180 (User interfaces); C6130B (Graphics techniques); C7420 (Control engineering); C3250 (Telecontrol and telemetering components); C3240M (Tactile sensors)

1/5/11 (Item 11 from file: 2)  
04052608 INSPEC Abstract Number: C9202-6180-019  
Title: Tele-existence and artificial reality  
Author(s): Tachi, S.  
Journal: Journal of the Japan Society of Precision Engineering vol.57, no.8 p.1321-5  
Publication Date: Aug. 1991 Country of Publication: Japan  
CODEN: JJPEAD ISSN: 0912-0289  
Language: Japanese Document Type: Journal Paper (JP)  
Treatment: Practical (P)  
Abstract: The author discusses tele-existence, telepresence, artificial reality, virtual reality, telerobotics, a master-slave system, and teleoperation. (13 Refs)  
Descriptors: computer graphics; digital simulation; robots; telecontrol; user interfaces  
Identifiers: artificial reality; tele-existence; telepresence; artificial reality; virtual reality; telerobotics; master-slave system; teleoperation  
Class Codes: C6180 (User interfaces); C6130B (Graphics techniques); C7420 (Control engineering); C3250 (Telecontrol and telemetering components); C3390 (Robotics)

1/5/12 (Item 12 from file: 2)  
04050286 INSPEC Abstract Number: C9201-6180G-028  
Title: Interfacing to virtual reality: modes of interaction with virtual objects  
Author(s): Purcell, P.  
Author Affiliation: MIT, Media Lab., Cambridge, MA, USA  
Conference Title: Computer Graphics 90. Proceedings of the Conference  
p.43-5  
Publisher: Blenheim Online, London, UK  
Publication Date: 1990 Country of Publication: UK x+386 pp.  
ISBN: 0 86353 253 5  
Conference Date: 6-8 Nov. 1990 Conference Location: London, UK  
Language: English Document Type: Conference Paper (PA)  
Treatment: Practical (P)  
Abstract: One of the three constituencies of artificial reality is selected, namely the human interface issue. An account of some of the work being undertaken in the Media Laboratory is given. The author comments on the interdisciplinary nature of the academic programme of the laboratory and how this influences the character of the resultant interface research. (6 Refs)  
Descriptors: digital simulation; graphical user interfaces; human factors  
Identifiers: virtual objects; artificial reality; human interface issue; interdisciplinary nature; academic programme; interface research  
Class Codes: C6180G (Graphical user interfaces); C6130B (Graphics techniques)

1/5/13 (Item 13 from file: 2)  
04034673 INSPEC Abstract Number: B9201-6210P-007, C9201-6180G-003  
Title: Teleconferencing with realistic sensations  
Author(s): Kishino, F.  
Journal: Journal of the Society of Instrument and Control Engineers  
vol.30, no.6 p.485-9

Publication Date: June 1991 Country of Publication: Japan

CODEN: KESEA4 ISSN: 0453-4662

Language: Japanese Document Type: Journal Paper (JP)

Treatment: General, Review (G)

(12 Refs)

Descriptors: graphical user interfaces; teleconferencing

Identifiers: artificial reality; video teleconferencing; TOCUS; realistic sensations

Class Codes: B6210P (Teleconferencing); C6180G (Graphical user interfaces); C7410F (Communications); C7100 (Business and administration)

1/5/14 (Item 14 from file: 2)

04034671 INSPEC Abstract Number: C9201-5540B-005

Title: Force display

Author(s): Iwata, H.

Journal: Journal of the Society of Instrument and Control Engineers  
vol.30, no.6 p.472-7

Publication Date: June 1991 Country of Publication: Japan

CODEN: KESEA4 ISSN: 0453-4662

Language: Japanese Document Type: Journal Paper (JP)

Treatment: General, Review (G)

(10 Refs)

Descriptors: computer animation; force measurement; graphical user interfaces; interactive devices; interactive systems

Identifiers: force display; artificial reality; haptics; force sense; input device; interactive graphics; SANDPAPER; personal HOOPS; GROPE

Class Codes: C5540B (Interactive-input devices); C6180G (Graphical user interfaces)

1/5/15 (Item 15 from file: 2)

04034670 INSPEC Abstract Number: C9201-3370L-001

Title: Tele-existence

Author(s): Tachi, S.

Journal: Journal of the Society of Instrument and Control Engineers  
vol.30, no.6 p.465-71

Publication Date: June 1991 Country of Publication: Japan

CODEN: KESEA4 ISSN: 0453-4662

Language: Japanese Document Type: Journal Paper (JP)

Treatment: General, Review (G)

(13 Refs)

Descriptors: computer animation; graphical user interfaces; telecontrol

Identifiers: tele-existence; tele-presence; artificial reality; virtual reality; virtual environment; real world; virtual world; tele-reality; physical world; teleoperated vehicle; teleoperated robot; Naval Ocean Systems Center

Class Codes: C3370L (Remote signalling, dispatching and safety devices); C6180G (Graphical user interfaces); C7420 (Control engineering); C5540B (Interactive-input devices)

1/5/16 (Item 16 from file: 2)

04007777 INSPEC Abstract Number: C91071261

Title: Space interface device for artificial reality-SPIDAR

Author(s): Sato, M.; Hirata, Y.; Kawarada, H.

Author Affiliation: Precision & Intelligence Lab., Tokyo Inst. of Technol., Yokohama, Japan

Journal: Transactions of the Institute of Electronics, Information and Communication Engineers D-II vol.J74D-II, no.7 p.887-94

Publication Date: July 1991 Country of Publication: Japan

CODEN: DIGDE7

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Experimental (X)

Abstract: To develop a human interface for shape modeling of 3-dimensional objects, it is necessary to construct a virtual working space, where one can manipulate object models directly just like in real space. The authors observe the human manipulation process of 3-dimensional objects and analyse the flows of perceptual information in the process. For the realization of the virtual working space, they propose a space interface device SPIDAR (space interface device for artificial reality). They demonstrate two experiments to evaluate the virtual working space using SPIDAR to confirm the effect of the sense of force on work in the virtual space. (2 Refs)

Descriptors: interactive devices; telecontrol; user interfaces

Identifiers: force sense; feedback; artificial reality; human manipulation process; 3-dimensional objects; perceptual information; space interface device; SPIDAR

Class Codes: C5540B (Interactive-input devices); C3250 (Telecontrol and telemetering components)

1/5/17 (Item 17 from file: 2)

03962590 INSPEC Abstract Number: C91059543

Title: Virtual, interactive literature

Author(s): Desmarais, N.

Author Affiliation: Providence Coll., RI, USA

Journal: CD-Rom Librarian vol.6, no.6 p.18-20

Publication Date: June 1991 Country of Publication: USA

CODEN: CDLIEQ ISSN: 0893-9934

Language: English Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: Systems designers are working on developing products that will integrate a variety of consumer electronic commodities, such as stereo systems, televisions, and computers. These devices will give rise to a new dimension in learning and entertainment. One can expect these two activities to eventually merge into a new field that some analysts refer to as 'edutainment.' Some people describe this process as 'ninetendizing information.' Others refer to it as 'artificial reality,' an oxymoronic term, otherwise known as 'virtual reality,' or 'cyberspace.' Virtual reality takes our lives into the technology. It suggests that life, like film, video, and computer data, can be edited to become 'post human' radically reprogrammed through artificial evolution or redesigned by technology. One enters this artificial world by putting on special clothing wired to a computer. The computer generates sounds and images either of the real world or of an imaginary one that appear to the viewer in three dimensions. The author examines the applications for this advanced simulation technique for ego, training pilots, teaching surgeons. He focuses on its uses in novels, plays and films and the concept of interactive literature. The 'reader' would control the action and the plot would change depending on the reader's choices of actions. Examples are given to illustrate these concepts. (0 Refs)

Descriptors: artificial intelligence; digital simulation; interactive systems; literature

Identifiers: consumer electronic commodities; stereo systems; edutainment; artificial reality; virtual reality; cyberspace; Virtual reality; computer data; post human; artificial evolution; artificial world; sounds; images; real world; advanced simulation technique; training pilots;

surgeons; novels; plays; films; interactive literature

Class Codes: C7000 (Computer applications); C6170 (Expert systems)

1/5/18 (Item 18 from file: 2)

03879113 INSPEC Abstract Number: C91036551

Title: Artificial reality and simulator

Author(s): Iwata, H.

Author Affiliation: Inst. of Eng. Mech., Tsukuba Univ., Ibaraki, Japan

Journal: Journal of the Japan Society for Simulation Technology vol.9,  
no.4 p.238-48

Publication Date: Dec. 1990 Country of Publication: Japan

CODEN: SHIMDM ISSN: 0285-9947

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: Artificial reality is a configuration of a human interface presenting a computer-generated virtual world to sense organs such as eyes, ears, skins, and so on. The major objective of artificial reality is to amplify human intelligence by natural communication between computer and human being. The paper presents a brief history of artificial reality and topics of force display and virtual space walking systems. Force display is a virtual space operation system, combining real-time computer graphics and force feedback device. The paper describes issues of artificial reality technology and examples of developed systems. Expected application areas and future direction are discussed. (10 Refs)

Descriptors: computer graphics; graphical user interfaces; real-time systems; simulation

Identifiers: human interface; computer-generated virtual world; sense organs; artificial reality; force display; virtual space walking systems; real-time computer graphics; force feedback device

Class Codes: C6130B (Graphics techniques)

1/5/19 (Item 19 from file: 2)

03879112 INSPEC Abstract Number: C91036550

Title: The real-time computer graphics animation created through analysis of human movement

Author(s): Kawabata, M.; Sakamoto, H.

Author Affiliation: Fuji Television Network, Inc., Tokyo, Japan

Journal: Journal of the Japan Society for Simulation Technology vol.9,  
no.4 p.227-37

Publication Date: Dec. 1990 Country of Publication: Japan

CODEN: SHIMDM ISSN: 0285-9947

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: Utilizing optical fiber sensors and magnetic sensors, 'DATAGLOVE' and 'DATASUIT' are tools which evaluate wide ranging movements of the human body under real time. As such, they are receiving much attention as interfaces for artificial reality. At the exhibition hall, TEPIA, in Aoyama, Tokyo which has an aim of proliferating the latest in technology, the 'HARP Exhibition' was held. The theme of this exhibition was 'ADVANCED INTERFACES', focusing on new interface technology between man and machines. Utilizing a 'DATASUIT' and 'DATAGLOVE', movements of the human body are transferred to the computer as numerical data. This information is displayed, under real time, by a three dimensional CG system and a picture of animation of the movements displayed. The report focuses on this system. (2 Refs)

Descriptors: computer animation; graphical user interfaces; optical fibres; real-time systems

Identifiers: optical fiber sensors; magnetic sensors; DATAGLOVE; DATASUIT  
; human body; real time; artificial reality; HARP Exhibition; interface  
technology; numerical data; three dimensional CG system; animation

Class Codes: C6130B (Graphics techniques); C6180 (User interfaces)

1/5/20 (Item 20 from file: 2)

03838321 INSPEC Abstract Number: C91023947

Title: Human interface using artificial reality

Author(s): Takemura, H.; Kishino, F.

Author Affiliation: ATR Commun. Syst. Res. Labs., Kyoto, Japan

Journal: Journal of the Institute of Television Engineers of Japan  
vol.44, no.8 p.981-5

Publication Date: Aug. 1990 Country of Publication: Japan

CODEN: JIJA7 ISSN: 0386-6831

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: Artificial reality reproduces a visionary world by giving artificial stimulation to the receptor which is generally used to recognize the state of the outer world. Application to the human interface enables the equipment's original interface to be offered to users in a quite different form. It is also possible to carry out new types of communication, conference and cooperative work by utilizing the visionary world created as the space commonly possessed by a number of people. This paper covers the present state of technology and some examples of its application to the human interface. (13 Refs)

Descriptors: graphical user interfaces; groupware; human factors;  
interactive systems

Identifiers: artificial reality; visionary world; artificial stimulation;  
conference; cooperative work; technology; human interface

Class Codes: C6180 (User interfaces); C6130B (Graphics techniques);  
C0230 (Economic, social and political aspects)

1/5/21 (Item 21 from file: 2)

03791402 INSPEC Abstract Number: C91010885

Title: Artificial reality with force-feedback: development of desktop  
virtual space with compact master manipulator

Author(s): Iwata, H.

Author Affiliation: Inst. of Eng. Mech., Tsukuba Univ., Ibaraki, Japan

Journal: Computer Graphics vol.24, no.4 p.165-70

Publication Date: Aug. 1990 Country of Publication: USA

CODEN: CGRADI ISSN: 0097-8930

U.S. Copyright Clearance Center Code: 0097-8930/90/008/0165\$00.75

Conference Title: SIGGRAPH 1990. 17th Annual ACM Conference on Computer  
Graphics and Interactive Techniques

Conference Sponsor: ACM; IEEE

Conference Date: 6-10 Aug. 1990 Conference Location: Dallas, TX, USA

Language: English Document Type: Conference Paper (PA); Journal Paper  
(JP)

Treatment: Practical (P)

Abstract: A configuration for a human interface for artificial reality is discussed. The paper describes a method of implementing force-feedback in a virtual space manipulation system. The system is composed of two subsystems, a real-time graphic display system and a tactile input device with reaction force generator. A specialized graphics computer (Stardent TITAN) provides a real-time image of the virtual space. A 9 degree-of-freedom manipulator has been developed as a tactile input device. The manipulator applies reaction forces to the fingers and palm of the

operator. The generated forces are calculated from a solid model of the virtual space. The performance of the system is exemplified in manipulation of virtual solid objects such as a mockup for industrial design and a 3D animated character. (11 Refs)

Descriptors: graphical user interfaces; interactive devices; real-time systems; solid modelling; user interfaces

Identifiers: force-feedback; desktop virtual space; compact master manipulator; human interface; artificial reality; real-time graphic display system; tactile input device; reaction force generator; graphics computer; Stardent TITAN; solid model; virtual solid objects; industrial design; 3D animated character

Class Codes: C6130B (Graphics techniques); C5540B (Interactive-input devices); C6180 (User interfaces)

1/5/22 (Item 22 from file: 2)

03786592 INSPEC Abstract Number: B91006183, C91006796

Title: Impact of new technologies assessed by defense agency

Author(s): Arbogast, G.W.; Coviello, G.J.

Journal: Signal vol.44, no.12 p.59-62

Publication Date: Aug. 1990 Country of Publication: USA

CODEN: SGNAAZ ISSN: 0037-4938

Language: English Document Type: Journal Paper (JP)

Treatment: Applications (A); Practical (P)

Abstract: An experimental display system that combines three-dimensional graphics and sound to create an artificial reality is being explored by the Defense Communications Agency. Known as a virtual work station, this development is considered a major technical step in three-dimensional computerized image processing and is expected to evolve as a general purpose human information device. The agency's three-pronged approach to technology assessment involves identifying critical technologies that show prototyping promise by the mid-1990s; developing specific technology insertion projects for the agency's users; and continuing involvement with the military research and development community. (0 Refs)

Descriptors: aerospace simulation; computer graphics; computerised picture processing; engineering workstations; military computing; research and development management

Identifiers: display system; three-dimensional graphics; sound; artificial reality; Defense Communications Agency; virtual work station; technology assessment; prototyping; technology insertion projects; military

Class Codes: B7620 (Aerospace test facilities and simulation); B7260 (Display technology and systems); B7930 (Military communications); C7460 (Aerospace engineering); C5540 (Terminals and graphic displays); C6130B (Graphics techniques)

1/5/23 (Item 23 from file: 2)

03766687 INSPEC Abstract Number: C91004337

Title: A 3D interactive physically-based micro world

Author(s): Waters, K.; Wang, S.

Author Affiliation: Schlumberger Lab. for Comput. Sci., Austin, TX, USA

Journal: Proceedings of the SPIE - The International Society for Optical Engineering vol.1259 p.91-8

Publication Date: 1990 Country of Publication: USA

CODEN: PSISDG ISSN: 0277-786X

Conference Title: Extracting Meaning from Complex Data: Processing, Display, Interaction

Conference Sponsor: SPIE; Soc. Imaging Sci. Technol

Conference Date: 14-16 Feb. 1990 Conference Location: Santa Clara, CA,

USA

Language: English Document Type: Conference Paper (PA); Journal Paper (JP)

Treatment: Practical (P)

Abstract: Describes an approach to synthetic three-dimensional object manipulation using three different haptic I/O devices in a virtual workspace on a graphics superworkstation. The devices involve the operator in unique modes of interaction that require positioning a six degree-of-freedom sensor, applying torques to a static ball, or creating interpreted hand gestures. With these devices, the user can select, rotate and deposit synthetic virtual objects in the micro world. The micro world is an 'artificial reality' in which elementary physical forces of gravity, volume preservation, collision, and external user input may be applied. The techniques developed overcome some of the difficulties experienced with two-dimensional input devices in a three-dimensional space. Furthermore, the ability of the user to continuously modify physical constraints while observing the results in real-time facilitates data interpretation tasks. (15 Refs)

Descriptors: computer graphics; computer peripheral equipment; interactive systems; real-time systems; user interfaces

Identifiers: interaction modes; 3 Space; Spaceball; DataGlove; sensor positioning; real time observation; interactive physically-based micro world; synthetic three-dimensional object manipulation; haptic I/O devices; virtual workspace; graphics superworkstation; torques; interpreted hand gestures; virtual objects; artificial reality; physical forces; gravity; volume preservation; collision; external user input; physical constraints; data interpretation tasks

Class Codes: C6130B (Graphics techniques); C5540B (Interactive-input devices); C6180 (User interfaces)

1/5/24 (Item 24 from file: 2)  
03700468 INSPEC Abstract Number: D90002380  
Title: The ultimate interface (virtual-worlds technology)  
Author(s): Leibs, S.  
Journal: InformationWEEK no.276 p.46-8  
Publication Date: 25 June 1990 Country of Publication: USA  
CODEN: INFWE4 ISSN: 8750-6874  
Language: English Document Type: Journal Paper (JP)  
Treatment: Practical (P)

Abstract: At a handful of corporate and university research labs, hardware and software engineers are teaming up with urban planners, psychologists, and other 'soft science' experts to develop a suite of technologies known as 'artificial reality', 'virtual reality', or 'virtual worlds'. Broadly stated, their goal is to develop new ways of working with computers that are far more intuitive and powerful than today's common metaphor of the two dimensional desktop. They are developing systems in which computer users rely on special equipment, including goggles, gloves, and even entire suits to manipulate objects and otherwise work and play in a virtual world, a world that, depending on the specific application, may or may not resemble what most of us think of as reality. While these developers still face fundamental problems in bringing virtual technology into widespread use, their efforts have already found several niche markets. And, they say, virtual reality's potential is so great that it will not only find applications in business environments but in entertainment, the arts, and a host of consumer applications as well. (0 Refs)

Descriptors: human factors; user interfaces

Identifiers: man machine interface; three dimensional interface; artificial reality; virtual reality; virtual worlds; computers; goggles; gloves; suits; virtual technology; business environments; entertainment; arts; consumer applications

Class Codes: D5030 (Printers and other peripherals); D1040 (Human aspects)

1/5/25 (Item 25 from file: 2)

03625008 INSPEC Abstract Number: C90035948

Title: An intelligent information system for documentation of a building

Author(s): Valcher, P.; Locatelli, M.; Bianchi, D.; Morandi, R.

Author Affiliation: Dept. of Inf. Sci., Milan Univ., Italy

Conference Title: Quarto Convegno su: Text Processing (Fourth Meeting on Text Processing) p.201-9

Publisher: A.I.C.A, Milan, Italy

Publication Date: 1989 Country of Publication: Italy 349 pp.

Conference Date: 12-13 Dec. 1989 Conference Location: Milan, Italy

Language: Italian Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: An analysis is given of the relationships between the concepts of artificial reality and intelligent information systems and leads to a description of software for describing a real organisation, such as a department. The development uses a Hypercard packet. Notes are given on somewhat similar parallel developments. The methodology of the approach used is presented: i.e., form a data structure with all the data to handle and maintain the main details of a complete building. Putting the system into operation is described using a model made in Hypercard. The result is successful and it is hoped to make the system portable in the future. (10 Refs)

Descriptors: administrative data processing; building; hypermedia; knowledge based systems

Identifiers: building documentation; artificial reality; intelligent information systems; real organisation; Hypercard packet; data structure; complete building

Class Codes: C7190 (Other fields); C7440 (Civil and mechanical engineering); C6160Z (Other DBMS); C6170 (Expert systems)

1/5/26 (Item 26 from file: 2)

03595228 INSPEC Abstract Number: C90025953

Title: Telerobotics and tele-existence

Author(s): Tachi, S.

Journal: Journal of the Society of Instrument and Control Engineers vol.28, no.12 p.1059-64

Publication Date: Dec. 1989 Country of Publication: Japan

CODEN: KESEA4 ISSN: 0453-4662

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: The following topics are discussed; telerobotics, tele-existence, telepresence, artificial reality, and virtual environment display. The work of various government agencies is discussed. (16 Refs)

Descriptors: aerospace computer control; robots; space vehicles; telecontrol

Identifiers: tele-existence; telerobotics; telepresence; artificial reality; virtual environment display; government agencies

Class Codes: C3360L (Aerospace systems); C7420 (Control engineering); C7460 (Aerospace engineering); C3390 (Robotics); C3250 (Telecontrol and telemetering components)



1/5/27 (Item 27 from file: 2)

03526424 INSPEC Abstract Number: C90009680

Title: Information Detective: a workstation for exploring three dimensional information space

Author(s): Kojima, K.

Journal: SIGCHI Bulletin vol.21, no.1 p.78-9

Publication Date: July 1989 Country of Publication: USA

CODEN: SGBUD4 ISSN: 0736-6906

Language: English Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: Artificial reality is used to simulate two different kinds of space. One is the physical world and the other is a conceptual data model. A head mounted display can simulate the former. The authors propose a system, Information Detective, to simulate the latter. Information Detective is a workstation for browsing complex information spaces. It consists of a small flat display and two tracking sensors. It behaves like a magnifying glass in three dimensional space and can show object details in a natural way. It is being developed to keep users from losing themselves in large and complex information spaces. (6 Refs)

Descriptors: computer graphic equipment; data structures; user interfaces ; virtual machines; workstations

Identifiers: artificial reality; three dimensional information space; physical world; conceptual data model; head mounted display; Information Detective; workstation; complex information spaces; small flat display; tracking sensors; magnifying glass

Class Codes: C7430 (Computer engineering); C5540 (Terminals and graphic displays); C5430 (Microcomputers); C6120 (File organisation); C6180 (User interfaces)

1/5/28 (Item 1 from file: 8)

03084215 E.I. Monthly No: EI9107075834

Title: Impact of AI technology within the HVAC industry.

Author: Culp, Charles; Haberl, Jeff; Norford, Les; Brothers, Peter; Hall, John

Corporate Source: Honeywell Inc, Arlington Heights, IL, USA

Source: ASHRAE Journal v 32 n 12 Dec 1990 6p

Publication Year: 1990

CODEN: ASHRAA ISSN: 0001-2491

Language: English

Document Type: JA; (Journal Article) Treatment: G; (General Review)

Journal Announcement: 9107

Abstract: As it develops, artificial intelligence technology will have an increasing impact on building operations. This article focuses on: design; commissioning; diagnostics, operations and maintenance; training; and building and data management. Technologies that will affect these areas include expert systems, neural networks, intelligent computer aided design (ICAD), fuzzy logic and artificial reality. Expert systems are computer programs that mimic a human expert. Neural networks are computer programs that are designed to operate the way neurons operate in humans. Fuzzy logic is useful when the correct response is somewhere between a yes or a no because it can represent concepts such as almost, all, most and others. Artificial reality is a technology that allows users to project themselves into a computer generated 3-D simulation. 16 Refs.

Descriptors: \*ARTIFICIAL INTELLIGENCE; BUILDINGS--Climate Control; AIR CONDITIONING; HEATING; EXPERT SYSTEMS; NEURAL NETWORKS

Identifiers: HVAC INDUSTRY; ICAD; FUZZY LOGIC; ARTIFICIAL REALITY

Classification Codes: 723 (Computer Software); 402 (Buildings & Towers)  
; 643 (Space Heating & Air Conditioning)  
72 (COMPUTERS & DATA PROCESSING); 40 (CIVIL ENGINEERING); 64 (HEAT &  
THERMODYNAMICS)

1/5/29 (Item 2 from file: 8)  
03035440 E.I. Monthly No: EIM9103-009356  
Title: Artificial reality with force-feedback. Development of desktop  
virtual space with compact master manipulator.  
Author: Iwata, Hiroo  
Corporate Source: Univ of Tsukuba, Tsukuba, Jpn  
Conference Title: 17th Annual ACM Conference on Computer Graphics and  
Interactive Techniques - SIGGRAPH '90  
Conference Location: Dallas, TX, USA Conference Date: 1990 Aug 6  
E.I. Conference No.: 13813  
Source: Computer Graphics (ACM) v 24 n 4 Aug 1990. Publ by ACM, New York,  
NY, USA. p 165-170  
Publication Year: 1990  
CODEN: CPGPBZ ISSN: 0097-8930  
Language: English  
Document Type: JA; (Journal Article) Treatment: T; (Theoretical); A;  
(Applications)  
Journal Announcement: 9103  
Abstract: A new configuration of Human Interface for 'artificial reality'  
is discussed. This paper describes a method of implementing force-feedback  
in a virtual space manipulation system. The system is composed of two  
subsystems, a real-time graphic display system and a tactile input device  
with reaction force generator. A specialized graphics computer (Stardent  
TITAN) provides a real-time image of the virtual space. A 9  
degree-of-freedom manipulator has been developed as a tactile input device.  
The manipulator applies reaction forces to the fingers and palm of the  
operator. The generated forces are calculated from a solid model of the  
virtual space. The performance of the system is exemplified in manipulation  
of virtual solid objects such as a mockup for industrial design and a 3D  
animated character. (Author abstract) 11 Refs.  
Descriptors: \*COMPUTER GRAPHICS--\*Interactive; COMPUTER AIDED DESIGN;  
COMPUTER AIDED ENGINEERING; COMPUTER SYSTEMS, DIGITAL--Real Time Operation;  
ROBOTS, INDUSTRIAL--Manipulators  
Identifiers: ARTIFICIAL REALITY; REAL TIME GRAPHICS  
Classification Codes: 723 (Computer Software); 722 (Computer Hardware);  
731 (Automatic Control Principles)  
72 (COMPUTERS & DATA PROCESSING); 73 (CONTROL ENGINEERING)

1/5/30 (Item 3 from file: 8)  
01850402 E.I. Monthly No: EIM8501-004867  
Title: ARTIFICIAL REALITY ABSTRACTS.  
Author: Krueger, Myron W.  
Corporate Source: Univ of Connecticut, Dep of Electrical Engineering &  
Computer Science, Storrs, CT, USA  
Conference Title: 1984: Challenges to an Information Society, Proceedings  
of the 47th ASIS Annual Meeting.  
Conference Location: Philadelphia, PA, USA Conference Date: 1984 Oct  
21-25  
Sponsor: ASIS, Washington, DC, USA  
E.I. Conference No.: 05587  
Source: Proceedings of the ASIS Annual Meeting 47th v 21 1984. Publ for  
ASIS by Knowledge Industry Publ Inc, White Plains, NY, USA p 16

Publication Year: 1984

CODEN: PAISDQ ISSN: 0044-7870 ISBN: 0-86729-115-X

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8501

Abstract: The encounter between humanity and machines is considered. The role of computers in participant's action in a Responsive Environment is discussed that creates images and interactions.

Descriptors: \*SYSTEMS SCIENCE AND CYBERNETICS--\*Man Machine Systems; COMPUTER SYSTEMS, DIGITAL--Interactive Operation; CONTROL SYSTEMS--Computer Applications

Identifiers: RESPONSIVE ENVIRONMENT; PARTICIPANTS' ACTIONS; ARTIFICIAL REALITY; COMPUTER-BASED ART FORM; CONTINUOUS THEORIES CONCEPTUALIZATION; ABSTRACT ONLY

Classification Codes: 731 (Automatic Control Principles); 723 (Computer Software)

73 (CONTROL ENGINEERING); 72 (COMPUTERS & DATA PROCESSING)

1/5/31 (Item 1 from file: 582)

00165617

TITLE: Ishikawajima-Harima Heavy Industries Co.'s second generation space robot experiment facility using artificial reality and voice recognition system

SOURCE: Nikkei Mechanical, Iss. 340, Pages: 58-59, January 7, 1991

PUBLICATION YEAR: 1991

COMPANY NAME: Ishikawajima-Harima Heavy Industries Co., Ltd.

LANGUAGE: Japanese

ARTICLE TYPE: Application

ABSTRACT: Ishikawajima-Harima Heavy Industries Co. has established at its technical headquarters a remotely operated second generation robotic simulation test facility which operates in accordance with instructions received from earth. It is equipped to conduct operational experiments using combined facilities and the orbital replacement unit which links the test facilities and the main station with the space station. The test facilities are comprised of a head mounted display and data globe for artificial reality, the voice recognition equipment, a charge-coupled device camera, an industrial robot, and a personal computer for control.

DESCRIPTOR(S): space stations; robots; artificial reality; voice signals; microcomputers; charge-coupled devices; cameras

SECTION HEADING(S): Robotics and Control - Robotics

REFERENCE NUMBER(S): C135902

1/5/32 (Item 2 from file: 582)

00162708

TITLE: Japan Technology Transfer Association sets a committee for artificial reality (AR) and tele-existence research to promote cooperative efforts among industry, government, and academic institutions

SOURCE: Nikkei Mechanical, Iss. 337, Pages: 85, November 26, 1990

PUBLICATION YEAR: 1990

COMPANY NAME: MITI; Japan Technology Transfer Association

LANGUAGE: Japanese

ARTICLE TYPE: General Review

ABSTRACT: Created through the auspices of MITI and drawing on the participation of 52 top companies., this committee on artificial reality and tele-existence research held its first research meeting on 19

October 1990. Artificial reality produces stereoimage space in the operator's environment by three-dimensional computer graphics to create an interface which has the advantage of visual and ordinary finger and hand movements.

DESCRIPTOR(S): artificial reality; computer graphics; man-machine interface

SECTION HEADING(S): Computing Methodologies - Graphics

REFERENCE NUMBER(S): C134073

1/5/33 (Item 3 from file: 582)

00157181

TITLE: "Man-made realities" created by three-dimensional CG - Operating imaginary spaces by movement of head and hands

AUTHOR(S): Hattori, Shinichiro

SOURCE: Nikkei Mechanical, Iss. 333, Pages: 42-50, October 1, 1990

PUBLICATION YEAR: 1990

LANGUAGE: Japanese

ARTICLE TYPE: Application

ABSTRACT: Research is proceeding on artificial reality in order to produce easily-used interfaces using stereo images in three-dimensional computer graphics. In three-dimensional computer graphics it is possible to freely manipulate computer graphic objects. Development has begun on systems to supplement the display of systems of simulated experiences and assembly operations for showroom use by using these methods. (1 Ref.)

DESCRIPTOR(S): computer graphics; artificial reality; man-machine interface; research

SECTION HEADING(S): Computing Methodologies - Graphics

REFERENCE NUMBER(S): C130133

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\$0.00 0.000 Hrs File582

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\$0.50 TYMNET

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